

C.3 Biological Resources

This section describes effects to biological resources from the implementation of the proposed Littlerock Reservoir Sediment Removal Project (Project). The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts for a range of Project alternatives, and recommends measures to reduce or avoid adverse impacts anticipated from the construction of the proposed grade control structure, the removal of accumulated sediment, and from the ongoing operational effects from annual sediment removal. Existing laws and regulations relevant to biological resources are described and how the Project would comply with these regulations.

A Biological Assessment evaluates impacts to federally listed threatened, endangered, proposed, petitioned, and candidate species, and is written according to guidelines of the U.S. Fish and Wildlife Service (USFWS). A Biological Evaluation evaluates impacts to USDA Forest Service (Forest Service) Sensitive species. Because the Project has the potential to affect listed species, a Biological Opinion for the Project will also be completed by the USFWS and provided in the Final EIS/EIR.

C.3.1 Affected Environment

The Affected Environment for biological resources includes the baseline biological conditions of the Project area. Vegetation types within the Project area are described to characterize botanical resources and wildlife habitat values. Biotic habitats suitable for the occurrence of special-status plant and wildlife species are also described.

For the purposes of describing, assessing, and analyzing Biological Resources the Project area is defined as the Littlerock Reservoir and all day use areas, including roads and recreational areas (Figure C.3-1). This includes Rocky Point (the location of the proposed grade control structure) and a portion of Little Rock Creek extending approximately 1,000 feet upstream from Rocky Point.

C.3.1.1 Baseline Data Collection Methodology

This section provides a description of the methodology used to assess biological resources in the Project area. Biological information was collected through field investigations (i.e., reconnaissance, protocol, and focused surveys); review of existing online and published literature; consultation with local biologists and regional experts; and coordination with regulatory staff including the United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW; formerly the California Department of Fish and Game [CDFG]), and the Forest Service. Field surveys were conducted between 2007 and 2014.

Information from a review of the literature, combined with observations from Aspen's field surveys, were used to generate a list of sensitive vegetation communities and special-status plant and animal taxa that either observed or may have the potential to occur within the Study Area and adjacent habitat. For the purposes of this report, special-status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or USFWS and are protected under the Federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA);
- Are candidate species being considered or proposed for listing under these acts;
- Are considered Species of Special Concern by the CDFW;
- Are designated as California Rare Plant Rank (CRPR) 1, 2, 3, or 4 plant species;

- Are listed as Forest Sensitive Species by Angeles National Forest;
- Are fully protected by the California Fish and Game Code, Sections 3511, 4700, 5050, or 5515; or
- Are of expressed concern to resource or regulatory agencies, or local jurisdictions.

Literature Search

Sensitive biological resources known to occur in the region or potentially present were identified through a review of existing literature sources including USGS topographic maps, aerial photography, and the CDFW California Natural Diversity Data Base (CNDDDB) (CDFW, 2014). The Project site is located within the U.S. Geological Survey (USGS) Pacifico Mountain, California 7.5-foot topographic quadrangle. The following eight adjacent quadrangles were also included in the database search due to their proximity to the Study Area: Chilao Flat, Condor Peak, Acton, Ritter Ridge, Palmdale, Littlerock, Juniper Hills, and Waterman Mountain.

Additional data regarding the potential occurrence of special-status species and policies relating to these sensitive natural resources were gathered from the following sources:

- Special Animals List (CDFW, 2016a);
- State and federally listed endangered and threatened animals of California (CDFW, 2016b);
- California Wildlife Habitat Relationships (CDFG, 2008);
- Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2015);
- Angeles National Forest Land Management Plan (USFS, 2005);
- Pacific Southwest Region Regional Forester's Sensitive Species List (USFS, 2014);
- Consortium of California Herbaria (CCH, 2011);
- Biological Assessment for the Littlerock Dam and Reservoir Sediment Control Plan (PCR, 2001);
- Antelope Valley Area Plan (LADRP, 2015);
- County of Los Angeles Significant Ecological Areas (LADRP, 2014); and
- Aerial photographs of Littlerock Reservoir and surrounding areas (from October 2012, December 2011, July 2011, June 2009, July 2008, March 2006, February 2006, December 2005, November 2005, July 2003, June 2002, May 2002, June 1994, and May 1994).

Consultation with Agencies and Local Experts

Agency coordination has been ongoing and includes biological resource staff from the ANF, CDFW, and the USFWS. Biological resource data including the use and distribution of sensitive wildlife, including arroyo toads have also been obtained from interviews and site visits with experts on arroyo toad ecology including Ruben Ramirez, Larry Hunt, and William Haas.

Surveys

Aspen conducted biological resource assessments within and adjacent to the Project site between 2007 and 2015. Surveys were conducted by experienced biologists familiar with the resources in the region and under appropriate conditions to detect and identify plant and wildlife species. Surveys of the Project site were conducted year round in order to evaluate seasonal use of the site and to note wintering bird use. Field personnel included Chris Huntley, Jared Varonin, Brady Daniels, Cindy Hitchcock, Justin Wood, Tracy Popiel, Jennifer Lancaster, Lynn Stafford, Larry Hunt, Jason Berkeley, and William Haas.

Surveys were conducted across a broad geographic range to better characterize the biological resources that occur or have the potential to be present in the vicinity of the Project area. This area is defined as the Study Area and includes all portions of the Project area and a buffer that extends 0.25 miles upstream from Rocky Point (including a portion of Santiago Creek), and approximately one mile downstream of Littlerock Dam. Most wildlife surveys included the entire Study Area. Vegetation mapping was limited to a subset of the Study Area extending approximately 500 feet from the Project area. This area is identified as the Vegetation Study Area. Figure C.3-1 shows the limits of the Project area, Study Area, and Vegetation Study Area. Table C.3-1 includes a list of the surveys conducted and a brief summary of their results. Survey methodologies are described in Appendix C-1.

Table C.3-1. Summary of Surveys Conducted at the Littlerock Reservoir and Sediment Disposal Sites			
Target Species	Survey Type	Survey Dates	Results
Rare Plants and Vegetation	Focused Pedestrian Survey	16 May 2007 23 May 2010 7 Jul 2011 20 and 30 May 2012 6 Jun 2012	Three special-status plants, Johnston's monkeyflower (<i>Mimulus johnstoni</i>), short-joint beavertail (<i>Opuntia basilaris</i> var. <i>brachyclada</i>), and Lemmon's syntrichopappus (<i>Syntrichopappus lemmonii</i>) were detected within the Vegetation Study Area. These occurrences were outside of the Project area and would not be subject to disturbance. All vegetation types were mapped in the Vegetation Study Area (which included the proposed haul routes and sediment disposal site at 47th Street East).
Gastropods and Fish	Focused Pedestrian Survey of Micro-Habitats, Hand Raking Seining/Dip Netting/Visual Observations	1 - 3 Jun 2011 13 Jan 2012 4-5 Aug 2014	Sensitive gastropods were not detected in the Study Area. Several species of non-native fish were detected. Sensitive fish were not observed in the Study Area.
Amphibians and Reptiles	Acoustic, Focused Pedestrian, Inspections of Microhabitats	16 May 2007 24 Sep 2007 5, 14, 18 May 2010 1 - 3 Jun 2011 12 Jul 2012 13, 21 May 2014 Ongoing May 2015	One federally listed amphibian, the arroyo toad, was commonly detected within the Study Area above Rocky Point. The species has not been observed below the dam or within the Reservoir below Rocky Point. The species was not observed in the small tributary drainages that feed the Reservoir. Common amphibians were routinely observed at the Reservoir and along the stream terraces. Western toad was observed on access roads and in upland areas. Several sensitive reptiles were observed in the Study Area, including California legless lizard, coastal whiptail, coast horned lizard, and southwestern pond turtle.
Desert Tortoise and Burrowing Owl	Protocol Surveys	26 April 2014	The 47th Street sediment disposal site provides suitable habitat for burrowing owl and there is a moderate potential that this species would be present. Very few suitable burrows (i.e., ground squirrel only) were observed. No desert tortoise or their sign was found on or adjacent to the site.
Terrestrial Mammals	Reconnaissance-Level Surveys; Visual Surveys; Review of Scat, Tracks, Sign, Middens, and Burrows Habitat Assessment for Mohave Ground Squirrel	16 May 2007 5 and 14 May 2010 1-3 Jun 2011 13 Jan 2012 12 Jul 2012 22 Aug 2014 April 2015	Sensitive mammals (with the exception of bats, see below) were not detected in the Study Area. However, the area is expected to support a number of rare or protected species including bighorn sheep, American badgers, and ringtail.

Table C.3-1. Summary of Surveys Conducted at the Littlerock Reservoir and Sediment Disposal Sites			
Target Species	Survey Type	Survey Dates	Results
Bats	Visual and Acoustic (SongMeter™ SM2 and Wildlife Acoustics EM3)	17–18 May 2012 17–18 Jul 2012	Several species of bats were detected at the Reservoir including pallid bat and western small-footed myotis.
Least Bell's Vireo	Focused (Non-Protocol) and Protocol Surveys	22–23 Jul 2010 29 Apr 2011 10 and 19 May 2011 1, 10, 21 Jun 2011 1 and 12 Jul 2011 16 Feb 2012 18 Apr 2012 18 May 2012	Least Bell's vireo was detected on Little Rock Creek downstream of the dam. The birds fledged young in 2011 but did not appear to do so in 2012.
Birds	Focused Pedestrian and Acoustic	14 May 2010 22–23 Jul 2010 1–3 Jun 2011 12–13 Jul 2012 15 Dec 2011 18 Jan 2012 16 Feb 2012 18 Apr 2012 18 May 2012 12 Jul 2012 18 Jul 2012 30 Aug 2011 13 Jan 2012	Eighty-five species of birds were detected in the Study Area including a variety of special status species. Bald eagle is known as an occasional winter visitor.
State and Federal Waters	Formal Delineation	4–5 Aug 2014	Littlerock Reservoir was determined to support State and federal jurisdictional waters. Wetlands are not present at the Reservoir.

C.3.1.2 Environmental Setting

Regional Setting and Background

The Littlerock Reservoir (Reservoir) is located approximately 3 miles southwest of the community of Littlerock, within the boundaries of the Santa Clara Mojave Rivers Ranger District in the Angeles National Forest (ANF) (Figure C.3-2). Inflow into the Reservoir is seasonal and varies widely depending on annual precipitation and snowmelt. Littlerock Dam, constructed in 1924, was originally built to provide a source of irrigation for downstream agricultural activities. With the construction of the California Aqueduct, which started in 1960, the Reservoir became a back-up water source for the communities it served. Historically, the watershed supported cattle grazing and mining.

The primary sediment disposal site would be exhausted sand and gravel mines located in the community of Littlerock, approximately 6 miles north of the Dam (as shown in Figures B-1 and C.3-2). Currently, six individual quarries operate within this area. The quarries abut Little Rock Creek, residential areas, and isolated rural lands adjacent to Highway 138. Sediment would also be stockpiled on property owned by Palmdale Water District (PWD) located in semi natural lands immediately west of 47th Street East, just north of the California Aqueduct (see Figures B-11 and C.3-2). Though varied floristic influences exist in the Antelope Valley and surrounding foothills, this region has been subject to historic land uses such as farming, grazing, recreation, water diversion (i.e., the Littlerock Reservoir and the California Aqueduct), and infrastructure development (i.e., the construction of residential and commercial properties, military land uses including Edwards Air Force Base, Interstate 14, and Highway 138).

The Reservoir is located in the Antelope Valley at the transition of the southern border of the Mojave Desert and the northeastern foothills of the San Gabriel Mountains. The Reservoir and proposed access roads are surrounded by National Forest System lands with portions bordered by small private in-holdings, rural residences, and privately held natural lands. This Project is located in a broad transition zone between the Mojave Desert and the Transverse Ranges which supports a variety of native and introduced plants and wildlife. The 2005 Forest Service Land Management Plan indicates the ANF is home to approximately nine native species of fish, 18 amphibians, 61 reptiles, 299 birds, 104 mammals, 2,900 vascular plants, and an unknown number of species of invertebrate animals and non-vascular plants. Some of these species are endemic to the ANF, and some have special status as federally listed threatened, endangered, proposed, candidate, or Forest Sensitive Species. Little Rock Creek is home to several sensitive biological resources including the arroyo toad, two-striped garter snake, southwestern pond turtle, and a variety of rare birds including least Bell's vireo and bald eagle.

Local Setting

The Project area includes the Reservoir where sediment would be removed and the grade control structure installed at Rocky Point; staging areas located within or immediately adjacent to the Reservoir; and sediment disposal areas located off NFS lands. Sediment disposal areas are located up to 6 miles north of the Reservoir and include disturbed quarries and semi natural lands (See Figures C.3-3, C.3-4, and C.3-5).

Littlerock Reservoir and Rocky Point

The Reservoir is located in a narrow mountainous valley on NFS lands and is approximately one mile in length. Access to the Reservoir is from Cheseboro Road, named after a popular cowboy actor from the early twentieth century. The road is located on the west side of the reservoir where recreational facilities are located. These include a boat ramp, restrooms, parking areas, a small café, cabins, and picnic facilities.

The shoreline is composed of eroded slopes, sand, small rock, and fines. In a few locations the banks have been reinforced with rock gabions and riprap. In addition to providing drinking water, the Reservoir supports recreational opportunities including boating, fishing, and swimming. When the reservoir is drained at the end of summer, dry portions of the Reservoir have been open to recreational off-highway vehicle (OHV) travel.

The upstream portion of the Project area and the southern extent of the Study Area are located in the northern limit of the Lower Little Rock Creek Critical Biological Zone of the ANF. Little Rock Creek is closed to the public above Rocky Point to protect the federally endangered arroyo toad (*Anaxyrus californicus*) and its designated critical habitat. A barrier of orange snow fencing delineates this area. During the course of surveys Aspen routinely observed vehicle tracks beyond the barrier, indicating that some OHV users are entering designated critical habitat for arroyo toad.

Vegetation at the Reservoir varies and includes species associated with the Mojave Desert and San Gabriel Mountains. California buckwheat scrub, California juniper woodland, and singleleaf pinyon woodland dominate the foothills surrounding the Reservoir. This habitat is relatively intact although small trails from OHVs occur in a few locations. Vegetation along the margins of the Reservoir is affected by seasonal fluctuations in water surface elevations that occur from the operation of the facility. The lack of soil development, steep slopes, and variable water surface elevations limit vegetation to patchy isolated areas in most locations. These factors contribute to the lack of vegetation in most of the reservoir; however, a Fremont cottonwood (*Populus fremontii*) forest with western sycamore (*Platanus*

racemosa) and willows (*Salix sp.*) is present in the Reservoir near Rocky Point. During surveys conducted in 2012, Aspen observed that many of the mature cottonwoods and willows were dead or dying and many have been removed from the Reservoir. This community is also present north of Rocky Point and to some degrees in other upstream areas.

The proposed grade control structure would be located at Rocky Point, where the creek is confined between a steep natural slope to the east and a reinforced man-made slope on the west. This location supports a picnic area and is often used for fishing or water play. During periods of low water recreationists construct small dams to trap water in this area. Vegetation in the developed area includes scattered cottonwoods, Joshua trees, juniper, and upland shrubs while riparian areas support emerging riparian vegetation. Depending on the time of year, emerging riparian vegetation including juvenile willows colonize portions of the reservoir and stream channel but are removed from scour or lost through inundation during the winter.

Little Rock Creek Downstream of the Dam

North of the Dam, the channel supports relatively undisturbed Southern cottonwood-willow riparian forest and Mojave riparian forest. The riparian vegetation and associated transitional habitat located in this area is more characteristic of unconfined river channels; however, much of the fine sediments are trapped behind the Littlerock Dam. Thick stands of riparian vegetation border the active stream channel in many locations and form broad canopies over the stream. Understory species include mulefat and herbaceous wetland species such as bulrushes (*Scirpus spp.*), cattails (*Typha spp.*) and nutsedges (*Cyperus spp.*). Non-native grasses, stinging nettle (*Urtica dioica ssp. holosericea*), and mugwort (*Artemisia douglasiana*) are also common in mesic areas. In a few locations, dense thickets of poison oak (*Toxicodendron diversilobum*) also occur.

As the creek flows north, the channel becomes more characteristic of an alluvial fan where riparian vegetation becomes patchy and routinely intergrades with more upland species. Vegetation on the mid-to upper-stream terraces is largely characterized by California buckwheat scrub. Big sagebrush scrub is present to limited areas and confined to mature alluvial benches and roadsides. Juniper woodland, non-native pines, and cleared areas supporting bee-keeping are also present.

Sediment Disposal Sites and Access Roads

The PWD-owned property on 47th Street East consists of a 21-acre site dominated by California junipers (*Juniperus californica*). Additional shrubs include desert tea (*Ephedra nevadensis*), narrowleaf goldenbush (*Ericameria linearifolia*), California buckwheat, antelope brush (*Purshia glandulosa* var. *glandulosa*), Chaparral yucca (*Hesperoyucca whipplei*), and Joshua tree. A moderate cover of annual and perennial wildflowers including Xantu's chaenactis (*Chaenactis xantiana*), desert dandelion (*Malacothrix glabrata*), checker fiddleneck (*Amsinckia tessellata*), common phacelia (*Phacelia distans*), chia (*Salvia columbariae*), small-flowered poppy (*Eschscholzia minutiflora*), Kennedy's mariposa lily (*Calochortus kennedyi*), and wild hyacinth (*Dichelostemma capitata*) were detected on the site. The vegetation is best classified as California juniper woodland (Alliance; Sawyer et al., 2009) and also best matches descriptions of Mojavean juniper woodland and scrub in Holland (1986). Approximately 2 acres of the site is barren and a small trail system supporting OHV and equestrian uses crosses the site. Illegal dumping and scattered trash litter is common. A braided ephemeral drainage carries storm flows off the site.

The exhausted mining pits are located adjacent to Highway 136 and are primarily devoid of vegetation. Excluding the active quarries, vegetation in the surrounding area is dominated by Joshua tree woodland, creosote bush scrub, brittle bush-ephedra scrub, and ruderal communities (RCA, 2005; PCR, 2005).

PWD Facilities at Littlerock Dam

For the continued safe operation of the Dam and to support water deliveries, PWD maintains an access road, staging area, and various diversion facilities at the base of the Dam. Crews periodically inspect this area and conduct routine maintenance and monitoring activities. The access road crosses a small channel with a corrugated pipe to convey flows below the Dam. Near the toe of the Dam, riparian areas support a mixture of arroyo willow thickets, open water, and sandy wash habitats (See Figures C.3-3, C.3-4 and C.3-5). The composition of these communities varies to some degree based on scour and seasonal flooding. During large storm events, scouring flows pass over the spillway and remove most of the vegetation immediately below the Dam. During these events, the access road is washed out and must be replaced to maintain access to the Dam.

Small ranches, horse properties, a dog kennel, and a small network of dirt roads are present along portions of Cheseboro Road. Creosote bush scrub, Joshua tree woodland, rabbitbrush scrub, and ruderal vegetation border Cheseboro Road north of Mount Emma Road. South of Mount Emma Road, the vegetation transitions from more intact scrub communities dominated by California buckwheat scrub, Mormon tea scrub, and big sagebrush scrub (See Figure C.3-4).

C.3.1.3 Special Habitat Management Areas Overview

Riparian Conservation Areas

Riparian Conservation Areas (RCAs) are defined as “an area delineated next to water features requiring special management practices to maintain and/or improve watershed and riparian-dependent resource conditions” (USDA, 2005). They are managed for habitat conservation according to Standard S47 in Part 3 of the Forest Service Land Management Plan. This standard requires that RCAs within the Project area must be identified using USDA Five-Step Project Screening Process for Riparian Conservation Areas. RCAs include areas containing aquatic and terrestrial components and serve as the interface between land and water. Specifically, RCAs can include lands adjacent to perennial, intermittent, or ephemeral streams as well as in and around meadows, lakes, reservoirs, ponds, wetlands, vernal pools, seeps, springs, and other water bodies. RCAs are unique areas that support a high diversity of plant and animal species and typically have a high degree of endemism including threatened and endangered species. The variety of wildlife species associated with RCAs on the ANF is high and these species use these areas for breeding, aestivation, foraging, refugia, and as movement corridors (USDA, 2005).

To provide for the management of species that use riparian areas, each RCA has a buffer area of associated upland habitat which corresponds to the unique life history of the species. The size of an RCA is determined primarily by the type of water (perennial or intermittent), but can be adjusted for other characteristics such as topography, species present, and connectivity to other RCAs. Within the Project area several RCAs support threatened and endangered species including the arroyo toad.

Antelope Valley Significant Ecological Area

The Reservoir is located adjacent to the proposed Antelope Valley Significant Ecological Area (SEA) and portions of the haul route are within the SEA. The SEA designation is given to land that supports irreplaceable biological resources, and SEAs are mapped as a zoning overlay in the Los Angeles County General Plan (LADRP, 2014). Development within the SEAs is regulated by Los Angeles County Ordinance (Hillside Management and Significant Ecological Areas Ordinance) intended to preserve the biological resources and sustainability of the SEAs (LADRP, 2014).

United States Fish and Wildlife Service Critical Habitat

The Reservoir is located immediately downstream and adjacent to designated critical habitat for the arroyo toad (USFWS, 2011). The most recent critical habitat was designated on February 9, 2011 and is part of the Little Rock Creek Basin, which is designated as Unit 21 (50 CFR Part 17) (See Figure C.3-6).

C.3.1.4 Vegetation Communities and Landforms

Surveys resulted in the documentation of 266 species of native and non-native vascular plants within the Study Area. Non-vascular plants, including lichens and bryophytes, were not identified during the surveys. A list of all plants observed within the Vegetation Study Area is provided in Appendix C-2.

Eleven types of vegetation were mapped within the Vegetation Study Area (See Table C.3-2, Figures C.3-3, C.3-4, and C.3-5). Vegetation was classified using names and descriptions in Sawyer et al. (2009). Vegetation classification according to Holland (1986) is also included. Non-native woodland and ruderal vegetation were mapped, but do not match any vegetation descriptions in Sawyer et al. (2009). Four additional non-vegetated land cover types were mapped including developed, unvegetated lake bottom, sandy wash, and open water.

At the time of vegetation mapping, the Reservoir was at the dead pool elevation (i.e., was “dry”). It is important to note that the acreages of vegetation types mapped in within the Reservoir are representative of the vegetation present, but acreages vary seasonally and depend on level of inundation at any given time. Further, vegetation within the Reservoir inundation zone is dynamic and the extent and distribution vary with rainfall amounts, inundation times and extent, amount of scour experienced, and other factors.

Table C.3-2. Summary of Vegetation and Cover Types and Acreages					
Vegetation Community ¹		Type	Location		
Sawyer et al. (2009) Vegetation Classification	Holland (1986) Vegetation Classification		Reservoir ²	Haul Roads ³	Sediment Disposal Site
Arroyo willow thickets	Southern willow scrub	Riparian	5.26	2.02	0.00
Big sagebrush scrub	Big sagebrush scrub	Upland	2.88	17.05	0.00
Black willow scrub	Riparian scrub	Riparian	5.76	0.00	0.00
California buckwheat scrub	Mojave mixed woody scrub	Upland	79.60	21.09	0.00
California juniper woodland	Mojavean juniper woodland and scrub	Upland	32.01	47.44	28.2
Cattail marsh	Freshwater marsh	Riparian	0.00	0.27	0.00
Creosote bush scrub	Mojave creosote bush scrub	Upland	0.00	4.23	0.00
Fremont cottonwood forest	Southern cottonwood willow riparian forest	Riparian	3.59	4.41	0.00
	Mojave riparian forest				
Herbaceous wetland	Freshwater marsh	Riparian	3.56	0.00	0.00
Joshua tree woodland	Joshua tree woodland	Upland	0.00	4.41	0.00
Mormon tea scrub	Mojave mixed woody scrub	Upland	4.53	17.47	0.00
	Great Basin mixed scrub				
Rubber rabbitbrush scrub	Rabbitbrush scrub	Upland	0.00	22.86	0.00
Singleleaf pinyon woodland	Mojavean pinyon woodland	Upland	67.24	0.00	0.00

Table C.3-2. Summary of Vegetation and Cover Types and Acreages				
Vegetation Community ¹		Type	Location	
Sawyer et al. (2009) Vegetation Classification	Holland (1986) Vegetation Classification		Reservoir ²	Haul Roads ³ Sediment Disposal Site
Other Cover Types and Landforms⁴				
Developed		Upland	21.91	71.17 5.5
Non-native woodland		Upland	0.00	4.68 0.00
Open water		Riparian	9.65	0.00 0.00
Ruderal		Riparian	0.00	21.00 0.00
Sandy wash		Riparian	32.02	2.30 0.00
Unvegetated lake bottom		Riparian	54.69	0.00 0.00
Total			322.68	240.39 33.7

1 – Communities in **bold** type are considered sensitive by the CDFW.

2 – Vegetation was mapped within the Reservoir and surrounding 500-foot buffer; see Figure C.3-3. The Reservoir was dry when vegetation mapping was conducted. When full, the Reservoir comprises approximately 95 acres of open water.

3 – Vegetation was mapped within a 300-foot wide corridor centered on the centerline of the proposed haul roads; see Figure C.3-4.

4 – These cover types and landforms are not vegetation types defined in Sawyer et al. (2009) and Holland (1986).

Riparian Vegetation

Much of the natural riparian vegetation in California has been lost or degraded due to a variety of factors, including land use conversions to agricultural, urban, and recreational uses; channelization for flood control; sand and gravel mining; groundwater pumping; water impoundments; and various other alterations. Faber et al. (1989) estimated that as much as 95 to 97 percent of riparian habitats have been lost in southwestern California. Riparian communities are considered high priority for inventory by CDFW (CDFG, 2010).

Riparian habitats are biologically productive and diverse, and are the exclusive habitat for several threatened or endangered wildlife species and many other special-status species. Many of these species are wholly dependent on riparian habitats throughout the entirety of their life cycles, while others may utilize these habitats during certain seasons or life history phases. For example, numerous amphibian species breed in aquatic habitats, but spend most of their lives in upland areas.

In an otherwise arid landscape, primary productivity in riparian habitats is high due to year-round soil moisture. High plant productivity leads to increased habitat structural diversity and increased food availability for herbivorous animals, and in turn, predatory animals (reviewed by Faber et al., 1989). Insect productivity is also at relatively higher levels in riparian systems. During the warmer months, large numbers of insects provide a prey base for a diverse breeding bird fauna, including several special-status birds. Structural diversity, including standing dead trees and fallen logs is also much more evident in riparian systems than those of most regional uplands. Riparian woodlands tend to have multi-layered herb, shrub, and tree canopies, whereas most upland communities have a simpler structure. More complex habitat structure creates a greater diversity of nesting and foraging sites for birds. Similarly, mammal diversity is greater due to higher biological productivity, denning site availability, thermal cover, and water availability.

Fremont cottonwood forest (*Populus fremontii* Forest Alliance). Fremont cottonwood forest is the most mature riparian vegetation in the Vegetation Study Area. It is found at the margin of the reservoir and along Little Rock Creek above and below the reservoir. In the Project area, it is dominated by

Fremont cottonwood (*Populus fremontii*) with western sycamore (*Platanus racemosa*), black willow (*Salix goodingii*), and arroyo willow (*S. lasiolepis*). In higher elevations, this vegetation best matches southern cottonwood-willow riparian forest as described by Holland (1986). In the lower elevations of below the Reservoir this community best matches the description of Mojave riparian forest (Holland, 1986). Southern cottonwood-willow riparian forest and Mojave riparian forest are both recognized as sensitive communities by the CDFW (CDFG, 2010).

During surveys conducted in 2012, it was noted that many of the mature cottonwoods and willows that occur along the margins of the reservoir, mapped within Fremont cottonwood forest, were dead or dying (See Figure C.3-7). An unknown number of the dead trees have been felled and left in place. While the exact cause of the tree mortality is unknown, it can probably be attributed to extended periods of inundation.

Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance). Arroyo willow thickets are lower in stature and typically less mature than cottonwood forests. Arroyo willow thickets tend to establish in recently scoured portions of the floodplain that have available ground water and open soil. Given enough time between disturbances, this vegetation may develop into Fremont cottonwood forest. In the Project area, arroyo willow thickets are dominated by arroyo willow, black willow, and red willow (*S. laevigata*), with an understory of riparian shrubs and herbaceous perennials. This vegetation type matches descriptions of southern willow scrub in Holland (1986). Arroyo willow thickets also match the description of Southern Riparian Scrub, which is recognized as a sensitive community by CDFW (CDFG, 2010).

Cattail marshes [*Typha (angustifolia, domingensis, latifolia)* Herbaceous Alliance]. Cattail marsh is abundant at the upstream margin of the reservoir above Rocky Point. This community also periodically becomes established at Rocky Point after the Reservoir has been drawn down. Broad leaved cattail (*Typha latifolia*) is present along with many other native and non-native wetland plants, including rabbits foot grass (*Polypogon monspeliensis*), rushes (*Juncus* spp.), monkey flowers (*Mimulus* spp.), young willows, young saltcedar (*Tamarix ramosissima*), and sweet clovers (*Melilotus* spp.). Given enough time between scouring floods and changes in the water level of the reservoir, this vegetation will quickly develop into arroyo willow thickets. This vegetation best matches freshwater marsh as described by Holland (1986). This alliance is not recognized by CDFW as sensitive (CDFG, 2010).

Herbaceous wetland. This area is unvegetated due to seasonal inundation; however, riparian vegetation, weeds, and herbaceous plants quickly become established along some areas of the Reservoir. Herbaceous vegetation observed near Rocky Point includes native and non-native species such as rabbits foot grass, willow herb (*Epilobium ciliatum*), salt heliotrope (*Heliotropium curassavicum*), bracted verbenas (*Verbena bracteata*), and pineapple weed.

Upland Vegetation

In contrast to riparian and wetland plant species that are adapted to seasonally flooded or periodically saturated soils, upland plant communities consist of plant species that are adapted to drier conditions and typically require only seasonal precipitation to obtain adequate water resources for growth and reproduction. In the Vegetation Study Area, most of the upland plant communities are located in the foothills to the east and west of the Reservoir and adjacent to the haul road.

Juniper and Joshua tree woodland habitats support unique assemblages of plant and wildlife species and vast acreages of these habitats have been lost over the last several decades due to urbanization and agricultural activities in the Antelope Valley. In general, other desert plant communities lack

vertical structure and shade. However, these habitats provide the important structural characteristics for mammals and avian species. Additionally, unlike herbaceous or shrub-dominated habitats, arid woodlands are extremely slow developing, with mature juniper and pinyon woodlands requiring as much as 150 years to reach full maturity. Due to the unique floristic composition and structure of these communities, and due to historic and ongoing losses, several local plans, ordinances, and policies have designated juniper and Joshua tree woodland habitats as sensitive.

Big sagebrush (*Artemisia tridentata* Shrubland Alliance). Big sagebrush is uncommon and confined to mature alluvial benches and roadsides in the Vegetation Study Area. It is dominated by big sagebrush (*Artemisia tridentata*), with other plants such as rubber rabbitbrush (*Ericameria nauseosa*), desert bitterbrush (*Purshia glandulosa*), and hairy yerba santa (*Eriodictyon trichocalyx*) are present. This community best matches big sagebrush scrub as described by Holland (1986). In the Vegetation Study Area, big sagebrush intergrades with other types of vegetation, such as California juniper woodland, Mormon tea scrub, and rubber rabbitbrush scrub. This alliance is not recognized by CDFW as sensitive (CDFG, 2010).

California buckwheat scrub (*Eriogonum fasciculatum* Shrubland Alliance). California buckwheat scrub is common within the Vegetation Study Area, primarily on south-facing slopes adjacent to the reservoir and haul road. It is dominated by Mojave Desert California buckwheat (*Eriogonum fasciculatum* var. *polifolium*) with other species such as Acton's encelia (*Encelia actoni*), narrowleaf goldenbush (*E. linearifolia*), and Mormon tea (*Ephedra viridis*). California buckwheat scrub partially matches the description of Mojave mixed woody scrub as described by Holland (1986). This vegetation community is not recognized by CDFW as sensitive (CDFG, 2010).

California juniper woodland (*Juniperus californica* Woodland Alliance). California juniper woodland is found at several locations within the Vegetation Study Area. It is characterized by California juniper, which typically grows with an understory of species similar to those listed in California buckwheat scrub (described above) and Mormon tea scrub (described below). It best matches descriptions of Mojavean juniper woodland and scrub in Holland (1986). California juniper woodland tends to intergrade with singleleaf pinyon woodland (described below) in the Vegetation Study Area. California juniper woodland is not recognized by CDFW as sensitive (CDFG, 2010).

Creosote bush scrub (*Larrea tridentata* Shrubland Alliance). Creosote bush scrub is the most characteristic vegetation of the California deserts and is dominated by creosote bush (*Larrea tridentata*). Other shrub species present in smaller numbers include desert box thorn (*Lycium* spp.), Acton's encelia, and beavertail cactus. Ground cover among the shrubs is fairly open in most of the Project area, largely dominated by native bunchgrasses and other herbs. This community occurs near the proposed sediment disposal sites. This vegetation matches descriptions of Mojave creosote bush scrub in Holland (1986). Creosote bush scrub is not recognized by CDFW as sensitive (CDFG, 2010).

Joshua tree woodland (*Yucca brevifolia* Woodland Alliance). Joshua trees (*Yucca brevifolia*) are found at scattered locations throughout the Vegetation Study Area, but only the larger, intact patches are mapped separately. With the exception of the Joshua trees, these woodlands match the description of California juniper woodland (described above). This vegetation matches Joshua tree woodland as described by Holland (1986) and is recognized by CDFW as sensitive (CDFG, 2010).

Mormon tea scrub (*Ephedra viridis* Shrubland Alliance). This vegetation is similar in composition to California buckwheat scrub, but the dominant species are Mormon tea and desert bitterbrush. Within the Vegetation Study Area, it is isolated to a few steep north-facing slopes on the west side of the reservoir. It partially matches the description of Mojave mixed woody scrub and Great

Basin mixed scrub by Holland (1986). Mormon tea scrub is not recognized by CDFW as sensitive (CDFG, 2010).

Non-native woodland. This vegetation is composed primarily of non-native trees that have been planted for ornamental value and does not match any named vegetation in Sawyer et al. (2009) or Holland (1986). Non-native woodlands are present at several areas within the Vegetation Study Area, primarily along the haul routes. The largest non-native woodland in the Vegetation Study Area is near the reservoir entrance station where planted trees are persisting and in some cases reproducing. Non-native trees observed in this area include black locust (*Robinia pseudoacacia*), silk tree (*Albizia julibrissin*), cypresses (*Cupressus* spp.), saltcedar, and various pines (*Pinus* spp.). Non-native shrubs such as rosemary (*Rosmarinus officinalis*) and oleander (*Nerium oleander*) were also observed. Non-native woodlands are not recognized by CDFW as sensitive (CDFG, 2010).

Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance). This vegetation is characterized by the presence of rubber rabbitbrush. In the Vegetation Study Area, this vegetation was observed in a few isolated canyon bottoms and roadsides near the Reservoir and at several locations along the haul road. It is similar in species composition to big sagebrush (described above) but is dominated by rubber rabbitbrush. This vegetation matches descriptions of rabbitbrush scrub in Holland (1986) and is not recognized by CDFW as a sensitive community (CDFG, 2010).

Singleleaf pinyon woodland (*Pinus monophylla* Woodland Alliance). Singleleaf pinyon woodland is common within the Vegetation Study Area on slopes surrounding the Reservoir. Singleleaf pinyon pine (*Pinus monophylla*) is the dominant species, with California juniper, desert bitterbrush, and Joshua tree also present. Understory species are similar to those described in California buckwheat scrub (described above). This vegetation best matches Mojavean pinyon woodland described in Holland (1986). Singleleaf pinyon woodland is not recognized by CDFW as sensitive (CDFG, 2010).

Ruderal. Ruderal vegetation is characteristic of heavily disturbed sites such as roadsides, graded areas, and former agricultural lands. Ruderal areas typically have little overall vegetation cover, and what vegetation is present is dominated by non-native weeds, “weedy” native species, and escaped ornamental species. Ruderal species identified in the Vegetation Study Area include summer mustard (*Hirschfeldia incana*), cheat grass (*Bromus tectorum*), Mediterranean grass (*Schismus barbatus*), and pineapple weed (*Chamomilla suaveolens*). This vegetation is not recognized by CDFW as sensitive (CDFG, 2010).

Other Land Covers

Developed. There are numerous developed areas in the Project area including roads, parking lots, residential areas, and adjacent cleared lands. These areas are typically devoid of vegetation or support scattered ornamental species or low densities of weeds.

Sandy wash. This cover type is found in dry stream channels that have recently been scoured by floods. This cover type typically supports low densities of plant cover; however, in the absence of scouring flows or inundation these areas may develop more complex vegetation communities.

Open water. The operation of the Reservoir includes seasonal fluctuations in the water surface elevation. Typically, the Reservoir is at capacity after winter precipitation. Water levels are maintained through the summer and gradually lowered to the dead pool elevation after Labor Day. The change in the water surface elevations greatly affects the type and composition of vegetation at the Reservoir. When water recedes, large areas of barren sand and mud are exposed. When full, the Reservoir comprises approximately 95 acres of open water.

Unvegetated lake bottom. This cover type is found when the Reservoir is drained. Similar to sandy wash communities this cover type typically supports low densities of plant cover if any. However, in the absence of scouring flows or extreme heat these areas may support a variety of native and non-native vegetation.

Weeds

Executive Order 13112 defines criteria for certain plant species to be considered invasive. These species can effectively displace native species and modify the fire ecology of the forest. The term “noxious weeds” includes all plants formally designated by the Secretary of Agriculture or other responsible State officials. These are plants that have been determined to be undesirable or injurious in some capacity. (FSM 2900; USFS, 2011). Several noxious weeds already exist within the Vegetation Study Area, including the haul route. Some of these species occur in well-established populations and appear to be associated with historic disturbance.

Noxious weeds pose a threat to the natural processes of plant community succession, fire frequency, biological diversity, and species composition. The survival of some populations of special-status species could be adversely affected by the success of an introduced plant species. In areas subject to wildfires, exotic plants can quickly out-compete natives and change the ecology of the system. Noxious weeds present a severe threat to natural habitats. Monocultures of noxious weeds can create unfavorable conditions for native plants and wildlife. Heavy infestations of some species can also significantly reduce the recreational or aesthetic value of open space.

The Forest Service management direction indicates that noxious and invasive plant species pose a threat to native plant and animal species on NFS lands. FSM 2900 directs the Forest Service to require all equipment be cleaned when working in a site contaminated with noxious weeds.

Surveys within the Study Area identified 51 non-native plant species. Several of these are considered noxious weeds by the California Invasive Plant Council (Cal-IPC, 2013). Table C.3-3 lists the noxious and invasive plant species that were identified during the surveys. Figure C.3-8 depicts the location of each species in relation to the Reservoir and haul route. Appendix C-3 provides additional information on the life history characteristics, threat level, and currently recognized methods for their control or eradication.

Table C.3-3. Noxious and Invasive Plant Species Identified in the Vegetation Study Area		
Common Name	Scientific Name	Threat Level*
Brome grasses	<i>Bromus</i> spp.	High
Tocalote	<i>Centaurea melitensis</i>	Moderate
Short-pod mustard	<i>Hirschfeldia incana</i> (<i>Brassica geniculata</i>)	Moderate
Tree tobacco	<i>Nicotiana glauca</i>	Moderate
Jerusalem thorn	<i>Parkinsonia aculeata</i>	Evaluated But Not Listed
Rabbitsfoot grass	<i>Polypogon monspeliensis</i>	Limited
White horenettle	<i>Solanum elaeagnifolium</i>	Evaluated But Not Listed
Smilo grass	<i>Stipa millacea</i>	N/A
Tamarisk	<i>Tamarix</i> sp.	High
Wand mullein	<i>Verbascum virgatum</i>	N/A

*Cal-IPC threat levels:

Evaluated But Not Listed – there is insufficient information available to assign a rating, or the available information indicates that the species does not have significant impacts at the present time.

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

C.3.1.5 Common Wildlife

The Project area supports a wide range of vegetation communities associated with disturbed areas, rural residential properties, active quarries, and natural lands. The distribution of wildlife in the Project area varies greatly depending on location, vegetation community, and disturbance level.

The habitat with the greatest intrinsic value to wildlife is the riparian community. Little Rock Creek provides a diverse set of habitats that support a variety of wildlife species. These habitat types contribute to the diversity and abundance of wildlife in the region as they provide for permanent and migratory residency, foraging, and breeding behaviors. In addition, the creek bed and adjacent uplands provide breeding and refugia for a number of wildlife species. However, the Project area is also extensively used by recreationists including families, day users, boaters, and anglers. In the fall, portions of the site are subject to OHV use. The disturbance caused by these recreational activities limits the daytime use of the Project area by some species of wildlife and degrade the value for wildlife that enters the Reservoir area. Nonetheless, common and sensitive wildlife were detected at or near the Study Area. Appendix C-4 provides a list of all the wildlife detected in the Project area.

Invertebrates

Habitat conditions in the Study Area provide a suite of microhabitat conditions for a wide variety of terrestrial and aquatic insects, crustaceans, and other invertebrates. This includes swift running portions of Little Rock Creek with cobble and rocks, thick leaf litter, and pools of slow-moving or still water. As in all ecological systems, invertebrates play a crucial role in a number of biological processes. They serve as the primary or secondary food source for a variety of fish, bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as efficient components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. Surveys detected a wide variety of Anisoptera (dragonflies) Zygoptera (damselflies), Hemiptera (true bugs), Coleoptera (beetles), Diptera (flies), Plecoptera (stone flies), Lepidoptera (moths and butterflies), Hymenoptera (wasps, bees, and ants), and Trichoptera (caddis flies).

Both non-native Argentine ants (*Linepithema humile*, formerly *Iridomyrmex humile*), and native harvester ants (*Pogonomyrmex californicus*) were detected in the Study Area. Harvester ants were commonly observed in upland habitats to the east and west of the Reservoir. Stream invertebrates were common and included a variety of aquatic larvae such as damselflies, dragonfly larvae, and water bugs (i.e., toe biters [family Belostomatidae]). These aggressive insects prey on other insects, small fish, and amphibians.

Fish

Flows in the lower portion of Little Rock Creek below the Reservoir are primarily ephemeral and do not support year-round habitat for fish. The Reservoir does support perennial water; however, the amount of water available to fish fluctuates depending on annual rainfall and water releases. Habitat conditions in

Little Rock Creek above the Reservoir include overhanging vegetation, deep pools, and sections with short runs and riffles. Substrate conditions vary by location, but Little Rock Creek contains areas supporting silty sands, gravel, cobble, and boulder-dominated zones. Macro algae communities are present during portions of the year within localized areas and include mat-forming algae (*Charra sp.*). The Reservoir, when full, is approximately 100 feet deep and supports inundated vegetation that provides shelter for a variety of fish. Shallows and coves are present around portions of the Reservoir and provide habitat for species tolerant of warmer waters (i.e., Sunfish). Reservoir and creek temperatures vary by season and are a function of depth, location, and snow pack in the upper watershed.

Native fish were not detected during the surveys. Bluegill (*Lepomis macrochirus*) and largemouth bass (*Micropterus salmoides*) were the most common non-native species detected and were found to occur in the Reservoir and portions of Little Rock creek above Rocky Point. In addition, a gold fish (*Carassius auratus auratus*) was captured during surveys of the Reservoir in 2014. Rainbow trout (*Oncorhynchus mykiss*), and brown trout (*Salmo trutta*) have been detected in the Reservoir and the Little Rock Creek Watershed. However, due to potential negative effects on arroyo toad populations, a court order in 2009 required the CDFW to halt stocking activities at the Reservoir. Nonetheless, rainbow trout have been detected by Aspen as recently as 2014 in small pools above the Reservoir. However, due to drought conditions these pools dried up and the fish were lost through thermal stress, loss of oxygen, desiccation, or predation. As with many reservoirs and streams in California, nonnative and invasive fish were routinely detected during the surveys. Although not detected during the surveys, the watershed is known to support exotic species including green sunfish (*Lepomis cyanellus*), pumpkinseed sunfish (*L. gibbosus*), common carp (*Cyprinus carpio*), channel catfish (*Ictalurus punctatus*), and bullhead (*Ameiurus sp.*).

Contaminated Fish and Soils in Reservoir. In 2014, the California Office of Environmental Health Hazard Assessment (OEHHA) issued a bulletin noting high levels of mercury and polychlorinated biphenyls (PCBs) in fish tissue sampled from the Reservoir (LRWQCB, 2014). Sediment and fish tissue from Littlerock Reservoir were sampled on August 4, 2014. Fifteen samples, including 11 sediment samples and four fish tissue samples, were collected and analyzed for the presence of mercury, chlorinated pesticides, and PCB congeners. All of the tissue (i.e., four samples) tested positive for chlorinated pesticides (i.e., DDT, DDD, and DDE) with levels that exceed the reporting limit. In addition, a goldfish sampled at the Reservoir also tested positive for Hexachlorobenzene. All four fish tissue samples also tested positive for PCB congeners and for mercury, with the mercury results ranging from 0.3644 to 0.6601 ppm. The EPA and FDA require that fish sold across state lines contain less than 1.0 ppm of mercury (ATSDR, 1999). The OEHHA has provided Advisory Tissue Levels for contaminants in fish intended for human consumption. The bass, which had the highest levels mercury of all the sampled fish tissue, exceeded the “No Consumption” limit for children and women of child-bearing age (OEHHA, 2008). Although the sample size was small for fish (i.e., four fish), the tests support the previous work conducted by the State Water Resources Control Board’s (SWRCB) Surface Water Ambient Monitoring Program in 2007-2008, which detected elevated levels of mercury and PCB’s in fish collected from the Reservoir (LRWQCB, 2014).

Sediment samples did not detect chlorinated pesticides (including DDT), at or above the method detection limit (MDL). One PCB analyte (PCB138) was detected in 3 of the 11 samples, but the amount is extremely small (i.e., ranging from 1.1 to 1.9 parts per billion [ppb]). The MDL for this analyte is 1.0 ppb, and the reporting limit (RL) is 5.0 ppb. Because the three positive results for PCB138 in sediment all fall below the RL, the values reported are estimates. As mercury was analyzed as total mercury (Hg) (i.e., the element was not speciated in this analysis), it is unknown what percentage is organic mercury versus methylmercury. All 11 sediment samples tested positive for the presence of mercury (i.e., ranging from

0.0032 to 0.0213 parts per million [ppm]). The Agency for Toxic Substances and Disease Registry reports that normal levels of mercury in soil range from 0.02 to 0.625 ppm (ATSDR, 1999). All but one of the sediment sample results fall below the lower value of this range, and the one result that falls within this range lies at the extreme lower end of the range. A recent peer-reviewed synthesis study defined a critical upper limit for mercury in soils below which 95 percent of the 52 species sampled (including plants, animals, and microbes) would be unharmed by chronic exposure. This limit was found to be 0.13 ppm (Tipping et al., 2010). All 11 sediment sampling results are roughly an order of magnitude below this critical upper limit. In contrast to the fish samples, the sediment sampling results show that the Reservoir sediment is mostly free of contaminants and where a contaminant was detected the level of contamination was extremely low.

Amphibians

Amphibians often require a source of standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. Conditions within the Study Area generally provide year-round habitat for a variety of amphibian species. When flowing, Little Rock Creek can provide small pools, shallow rills and runs, and deep, wide slow-moving water supporting several native and nonnative species. The southern extents of the Reservoir provide a year-round water source within coves and shallows that are capable of supporting amphibian species. However, the presence of predatory fish likely decreases the numbers of amphibians that occur along the margins of the lake. Additionally, small pools and/or depressions located on the west side of the main access road were found to support breeding populations of amphibians. Observations of amphibians were also recorded along the western edges of the main entrance road to the recreational area below the dam.

Adjacent upland habitat and existing riparian vegetation provide ample foraging opportunities. Amphibians that were observed during surveys include the California tree frog (*Pseudacris cadaverina*), Baja California chorus frog (*P. hypochondriaca*), and the nonnative bullfrog (*Lithobates catesbeiana*). Western (California) toad (*Anaxyrus boreas [halophilus]*) adults and egg masses were also observed. Upland areas adjacent to the Reservoir have the potential to support populations of western spadefoot toad (*Spea hammondi*). Although not detected in the Study Area, both newts and salamanders are well documented in the region. These species are highly cryptic and often difficult to detect. Downed logs, bark, and other woody material in various stages of decay (often referred to as coarse woody debris) provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Maser and Trappe, 1984). Within the Study Area, these features are generally found within the Reservoir itself or the Little Rock Creek channel. Many native amphibians are adversely affected or excluded by exotic fish and amphibian species, which are common within the Study Area.

Reptiles

The number and type of reptile species that may occur at a given site is related to a number of biotic and abiotic features. These include the diversity of plant communities, substrate, soil type, and presence of refugia such as rock piles, boulders, and native debris. Reptiles were commonly observed in the Study Area, in both disturbed and natural areas. Western fence lizard (*Sceloporus occidentalis*), desert spiny lizard (*Sceloporus magister*), sagebrush lizard (*Sceloporus graciosus*), southern alligator lizard (*Elgaria multicarinata*), and side blotch lizard (*Uta stansburiana*) were observed whenever weather conditions were favorable and were broadly distributed within the uplands and along the edge of riparian habitats.

The Study Area also supports a variety of snakes. Southwestern threadsnake (*Rena humilis humilis*), San Diego gopher snake (*Pituophis catenifer annectens*), San Diego nightsnake (*Hypsiglena ochrorhyncha*

klauberi), patch-nosed snake (*Salvadora hexalepis*), striped racer (*Masticophis lateralis*), red racer (*Coluber flagellum piceus*), California lyersnake (*Trimorphodon lyrophanes*), long-nosed snake (*Rhinocheilus lecontei*), ring-neck snake (*Diadophis punctatus*), California kingsnake (*Lampropeltis getula californiae*), and Southern pacific rattlesnake (*Crotalus helleri*) were observed within the Study Area.

Although not observed, several other common reptiles likely occur in the Study Area. Most reptile species, even if present in an area, are difficult to detect because they are cryptic and their life history characteristics (i.e., foraging and thermoregulatory behavior) limit their ability to be observed during most surveys. Further, many species are active only within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators. In some cases, they are observed only when flushed from their refugia.

Common reptiles that may occur in desert scrub communities associated with the sediment disposal areas or in habitat present along the haul routes include western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), gopher snake (*P. catenifer*), desert iguana (*Dipsosaurus dorsalis*), desert night lizard (*Xantusia vigilis*), long-nosed leopard lizard (*Gambelia wislizenii*), and Mohave rattlesnake (*Crotalus scutulatus*). Other reptiles that are expected to occur in the Project area include glossy snake (*Arizona elegans*), common kingsnake (*Lampropeltis getula*), California whipsnake (*Masticophis lateralis*), red racer (*M. flagellum*), night snake (*Hypsiglena chlorophaea*), long-nosed snake (*Rhinocheilus lecontei*), spotted leaf-nosed snake (*Phyllorhynchus decurtatus*), western patch-nosed snake (*Salvadora hexalepis*), and lyre snake (*Trimorphodon biscutatus*).

Reptile species that may be present below the Reservoir in areas supporting Mojave riparian forest and desert wash habitats include the Gilbert skink (*Eumeces gilberti*), common garter snake (*Thamnophis sirtalis*), and southern alligator lizard (*Elgaria multicarinata*).

Desert tortoise. The desert tortoise (*Gopherus agassizii*) is a federal and State threatened species that ranges from the Mojave and Sonoran deserts of southeastern California and southern Nevada, south through Arizona into Mexico. It occurs primarily on flats and bajadas with soils ranging from sand to sandy gravel with scattered shrubs. The desert tortoise requires sufficient suitable plants for forage and cover, and suitable substrates for burrows and nest sites. The desert tortoise is threatened by off-road vehicles, livestock grazing, and mining. Disease related to human-caused stress is also taking a heavy toll on the desert tortoise (Christopher et al., 2003). Desert tortoise habitat is present at the proposed 47th Street East sediment disposal site and along the haul routes. Historically, desert tortoises were likely abundant in the Project area and likely utilized the foothills of the ANF. However, urbanization, infrastructure, and agricultural practices have fragmented existing populations in the region.

Habitat on the sediment disposal site has been mapped as suitable for desert tortoise by the DRECP (See Figure C.3-9). The predictive model (based on Nussear et al., 2009) ranks tortoise habitat based on sixteen environmental data layers including soils, landscape, climate, and biotic factors that were merged with desert tortoise presence data region wide. This model provides an output of the statistical probability of habitat potential that can be used to map potential areas of desert tortoise habitat (ibid.). The habitat quality is given a numeric value ranging from zero to 1. Areas within the designated mapping unit of one square kilometer given a rank of zero are not considered suitable habitat for desert tortoise; areas given the value of 1.0 represent high-quality habitat for this species. Model values for the sediment disposal site range from 0.6 to 1. Although the map identifies most of the sediment disposal site as high-quality desert tortoise habitat, portions of the Project site are clearly degraded or developed and do not constitute suitable habitat for desert tortoise. The model reflects hypothesized habitat

potential given the range of environmental conditions where tortoise occurrence was documented (Nussear et al., 2009). Therefore, there are likely areas of potential habitat for which habitat potential was not predicted to be high, and likewise, areas of low potential for which the model predicted higher potential (ibid.). Nussear et al. (2009) also states that the map of desert tortoise potential habitat does not account either for anthropogenic effects, such as urban development, habitat destruction, or fragmentation, which has been ongoing in this portion of the Antelope Valley for decades. Based on surveys of the 47th Street sediment disposal site PWD considers the habitat to be isolated from known occupied habitat and provide little value for the recovery of desert tortoise due to the development in the region.

Birds

Eighty-five species of common and sensitive birds were identified in the Study Area during surveys completed between 2010 and 2012. It is possible that many other birds use the site either as wintering habitat, seasonal breeding, or as occasional migrants. Special-status species are further discussed below.

The diversity of birds at this location is a function of the presence of perennial water and the wide variation in plant communities that provide habitat for a number of different groups of birds. For example, shore birds and other more aquatic species were commonly detected within the Reservoir and along Little Rock Creek. In a few locations both upstream of the Reservoir and downstream of the dam, the presence of small rock weirs have resulted in the formation of large pools where shore birds and ducks prey on insects and/or small fish. Mallard duck (*Anas platyrhynchos*), American coot (*Fulica americana*), green heron (*Butoroides virescens*), northern shoveler (*Anas clypeata*), and ruddy duck (*Oxyura jamaicensis*) were commonly observed, often feeding, within the surveyed areas. Great blue heron (*Ardea Herodias*), a CDFG Special Animal, and ring-necked duck (*Aythya collaris*) were also observed within the Study Area.

Various common song birds were detected within the Study Area and were closely associated or dependent on the riparian vegetation that borders portions of the Reservoir and is present along the Little Rock Creek Channel downstream of the dam structure. Riparian systems are frequently considered one of the most productive forms of wildlife habitat in North America. Many bird species are wholly, or at least partially, dependent on riparian plant communities for breeding and foraging (Warner and Hendrix., 1984). Some of the detected species included song sparrow (*Melospiza melodia*), ash-throated flycatcher (*Myiarchus cinerascens*), Bewick's wren (*Thryomanes bewickii*), cliff swallow (*Petrochelidon pyrrhonota*), house finch (*Carpodacus mexicanus*), yellow-rumped warbler (*Setophaga coronata*), warbling vireo (*Vireo gilvus*), lesser goldfinch (*Carduelis psaltria*), and least Bell's vireo (*Vireo bellii pusillus*).

Bird use of the upland areas east and west of the Reservoir and adjacent to Little Rock Creek was common and included a variety of song birds, raptors, vultures, and game birds. Western king bird (*Tyrannus verticalis*), spotted towhee (*Pipilo maculatus*), oak titmouse (*Baeolophus inornatus*), mourning dove (*Zenaidura macroura*), and California quail (*Callipepla californica*), were fairly common. Rock wren (*Salpinctes obsoletus*), California towhee (*Melozona crissalis*), and mountain quail (*Oreortyx pictus*) were also observed. Common ravens (*Corvus corax*) were observed nesting in several locations along the nearly vertical rock faces of the northeastern perimeter of the Reservoir. Several lesser nighthawk (*Chordeiles acutipennis*), a ground nesting species, were detected near the Reservoir and in Little Rock Creek above and below the dam.

Several raptors including red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), western screech owl (*Otus kennicottii*), and American kestrel (*Falco sparverius*) were observed either

soaring over the site (red-tailed hawks) or foraging for small birds in the Study Area (great horned owl and kestrel).

Although not detected during surveys described in this report, a review of available online eBird (eBird, 2016) data report observations of northern shoveler, Say's phoebe (*Sayornis saya*), western bluebird (*Sialia mexicana*), double-crested cormorant (*Phalacrocorax auritus*), red-breasted sapsucker (*Sphyrapicus ruber*), ladder-backed woodpecker (*Picoides scalaris*), ruby-crowned kinglet (*Regulus calendula*), hermit thrush (*Catharus guttatus*), and white-crowned sparrow (*Zonotrichia leucophrys*) at the Reservoir. Bald eagle (*Haliaeetus leucocephalus*), a state-listed endangered and fully protected species, was also reported at the Reservoir from eBird data.

A number of birds are expected to be present at the proposed sediment disposal sites or in desert communities along the proposed haul routes. Some of the species include verdin (*Auriparus flaviceps*), LeConte's thrasher (*Toxostoma lecontei*), black-throated sparrow (*Amphispiza bilineata*), and California quail (*Callipepla californica*). Joshua trees provide suitable nesting substrate for numerous species including red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), ladder-backed woodpecker (*Picoides scalaris*), loggerhead shrike (*Lanius ludovicianus*), Bewick's wren (*Thryomanes bewickii*), cactus wren (*Campylorhynchus brunneicapillus*), northern mockingbird (*Mimus polyglottos*), and Scott's oriole (*Icterus parisorum*).

Lesser nighthawk (*Chordeiles acutipennis*), horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), sage sparrow (*Amphispiza belli canescens*), migrant or wintering Brewer's (*Spizella breweri*), chipping (*Spizella passerina*), and savannah sparrows (*Passerculus sandwichensis*) are all known from local desert scrub communities. Juniper woodland habitat supports western scrub jay (*Aphelocoma californica*), phainopepla (*Phainopepla nitens*), and house finch (*Carpodacus mexicanus*). Although not observed Bendire's thrasher (*Toxostoma bendirei*) and American robin (*Turdus migratorius*) would also be expected to occur in desert scrub communities.

The Reservoir and surrounding region is home to a variety of wintering birds and there is a well-known change in use by "migrant" species between the breeding season in spring and summer and in the winter. Most of the "Neotropical migrants" that are present during the breeding season are absent in the winter, and a different complement of "winter migrant" bird species is encountered (in addition to resident species that are present in all seasons). Studies in the Central Valley (Motroni, 1979) have indicated that the absolute numbers of wintering riparian birds may equal or even exceed the numbers present in the breeding season. At the Reservoir, periodic wintering use by bald eagles has been noted in addition to other common winter visitors. Wintering ferruginous hawk (*B. regalis*), great horned owl (*Bubo virginianus*), and other raptors are common in the Antelope Valley and may periodically visit the Reservoir. Other common birds that forage on invertebrates and/or seeds in agricultural fields in the Antelope Valley include killdeer (*Charadrius vociferous*) and American pipit (*Anthus rubescens*), species known from the Reservoir. Alfalfa fields are especially important as the primary foraging area for the locally nesting Swainson's hawk (*B. swainsoni*), a species listed as threatened by the CDFG. Other wintering species known from the region include mountain plovers (*C. montanus*). These species were not observed in the Survey Area; however, they may overfly the area. Similarly, western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) has not been detected at the Project site. Nesting habitat for this species is marginal at best below the dam and generally lacks the size and structure preferred by this bird. It was determined that suitable habitat for this species is not present at the Reservoir.

Mammals

The distribution of mammals in the Study Area is associated with the presence of such factors as access to perennial water, topographical and structural components (i.e., rock piles, vegetation, and stream terraces) that provide for cover and support prey base; and the presence of suitable soils for fossorial mammals (i.e., sandy areas in the upper portions of the Reservoir when water levels are low).

Small mammals or their sign were commonly observed during most of the surveys. These included California ground squirrel (*Spermophilus beecheyi*), desert shrew (*Notiosorex crawfordi*), California vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), Botta's pocket gopher (*Thomomys bottae*), black-tailed jackrabbit (*Lepus californicus*), and desert cottontail (*Sylvilagus audubonii*). Mojave riparian forest located below the Reservoir provides foraging and breeding habitat for ornate shrew (*Sorex ornatus*), brush mouse (*Peromyscus boylii*), and southern grasshopper mouse (*Onychomys torridus*). Predators such as the long-tailed weasel (*Mustela frenata*) are likely to be attracted to the wooded riparian habitats that occur on Little Rock Creek.

Mid-size mammals including raccoon (*Procyon lotor*), long-tailed weasel (*Mustela frenata*), bobcat (*Felis rufus*), mountain lion (*Puma concolor*), mule deer (*Odocoileus hemionus*), gray fox (*Urocyon cinereoargenteus*), and coyote (*Canis latrans*) were detected. While not detected during surveys, striped skunk (*Mephitis mephitis*) and American badger (*Taxidea taxus*) have the potential to occur within the Study Area. Because Littlerock and Santiago Creeks provide a large continuous corridor through the Angeles National Forest, far-ranging species like black bear (*Ursus americanus*) appear to frequent the Study Area.

Juniper woodland habitat located at the Reservoir and to some degree at the proposed 47th Street East disposal site provides breeding and foraging habitat for many mammals, such as California ground squirrel (*Spermophilus beecheyi*), desert kangaroo rat (*Dipodomys deserti*), long-tail pocket mouse, pinyon mouse (*Peromyscus truei*), and mule deer. Gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and kit fox (*Vulpes macrotis*) also may occur.

Creosote bush scrub and other desert scrub communities located along the haul roads provide foraging and breeding habitat for many species including pocket mouse (*Perognathus* spp.), white-tailed antelope squirrel (*Ammospermophilus leucurus*), California ground squirrel, desert kangaroo rat (*Dipodomys deserti*), Merriam's kangaroo rat (*D. merriami*), desert cottontail (*Sylvilagus audubonii*), desert woodrat (*Neotoma lepida*), kit fox, and coyote.

Joshua trees provide foraging and breeding habitat for cactus mouse (*Peromyscus eremicus*), canyon mouse (*P. crinitus*). Several bat species may forage over desert scrub and Joshua tree woodland, such as pallid bats (*Antrozous pallidus*), western pipistrelles (*Pipistrellus hesperus*), big free-tailed bat (*Nyctinomops macrotis*), western mastiff bat (*Eumops perotis*), Mexican free-tailed bat (*Tadarida brasiliensis*), and spotted bat (*Euderma maculatum*).

Bats were commonly detected and forage over most of the Study Area where they prey on small insects, moths, and other invertebrates. Many bats concentrate foraging activities in riparian and wetland habitats where insect abundance is high (CDFG, 2000). Common bats detected in the Study Area, using visual searches (utilizing a Echo Meter EM3) and a Sonobat system, included canyon bat (*Parastrellus hesperus*), greater bonneted bat (*E. perotis*), Mexican free-tailed bat, and big brown bat (*Eptesicus fuscus*). Special-status bats (discussed further in Section 4.4 below) detected in the Study Area included pallid bat (*Antrozous pallidus*), Yuma myotis (*Myotis yumanensis*), and western small-footed myotis (*Myotis ciliolabrum*). Although not detected, it is likely that fringed myotis (*M. thysanodes*) and long-

legged myotis (*M. volans*) occur within or adjacent to the Study Area. Migrant bats such as the western red bat (*Lasiurus blossevillei*) and the hoary bat (*L. cinereus*) may occur in riparian areas in the spring and early fall.

Mohave ground squirrel. Historically, the Mohave ground squirrel (*Spermophilus mohavensis*), a State listed species, was widely distributed in the region possibly including the proposed sediment disposal site. Since the early 1950s, urbanization, infrastructure, and agricultural practices have fragmented existing populations in the region and the population has declined in the Palmdale region. Habitat on the sediment disposal site has been mapped as suitable for this species by the DRECP (See Figure C.3-9). Model values for the sediment disposal site range from poor quality habitat ranked at 0.0 to 0.2 to moderate habitat ranked from 0.4 to 0.6. However, a 2015 survey determined that the sediment disposal site does not contain suitable habitat for this species (Phoenix, 2015).

C.3.1.6 Management Indicator Species

The Angeles National Forest Land Management Plan offsets a goal of sustaining viable populations of native and desired non-native species. The LMP selected Management Indicator Species (MIS), defined as species whose population or habitat trends are believed to indicate the effects of management activities on National Forest System lands (36 CFR 219.19(a) (1) [1982]; 36 CFR 219.14 [2005]), and as a focus for monitoring (36 CFR 219.19(a) (6) [1982]). On the ANF, the following habitat types and management issues have been assigned an indicator species as a measure of management success:

- | | |
|--|---|
| ■ Healthy Diverse Habitats (Mule deer) | ■ Aquatic Habitat (Arroyo toad) |
| ■ Fragmentation (Mountain lion) | ■ Oak Regeneration (Blue oak, Engelman oak, and Valley oak) |
| ■ Montane Conifer Forest (California spotted owl, California Black oak, and White fir) | ■ Bigcone Douglas-fir Forest (Bigcone Douglas-fir) |
| ■ Riparian Habitat (Song sparrow) | ■ Coulter Pine Forest (Coulter pine) |

MIS that occur in the Project area include mule deer, mountain lion, arroyo toad, and song sparrow. A description of each MIS in the Project area is provided below.

Healthy Diverse Habitats (Mule Deer). Mule deer are common on the ANF and have been routinely observed at the Reservoir. These animals occupy a wide range of habitats but prefer to forage and shelter near riparian areas, seeps, and oak woodlands. While these species occupy most habitats, late successional chaparral typically is not preferred for foraging. Mule deer on NFS lands use dense vegetation for cover and forage mainly in open sagebrush and edge habitats. These species are able to move along an elevational gradient to maximize use of climatic conditions and forage availability during different seasons. Movement usually occurs in the fall and spring and roughly the same routes are used by the same herds year after year. On the ANF, the current deer herd is believed to include approximately 2,180 mule deer (USFS, 2005). Mule deer have been chosen as an indicator of the effectiveness of forest management strategies on landscape patterns in chaparral age class diversity (USFS, 2005).

Fragmentation (Mountain lion). The mountain lion is selected as an MIS to monitor the effects of forest activities and uses on a landscape-level scale to determine effects of habitat fragmentation and habitat linkages (USFS, 2005). The general health of this species largely depends on current deer populations and this solitary animal prefers large areas of undisturbed habitat that supports a stable prey base. Populations of this species on NFS lands are low primarily because this species requires large home ranges and has limited social interaction (USFS, 2005). The greatest concern to this species is loss of

habitat and connectivity between home ranges. Suitable range for this species occurs in the Project area and this species is expected to be present at the Reservoir.

Riparian Habitat (Song sparrow). The song sparrow is selected as an MIS because its relative abundance is expected to be responsive to disturbance or management activities. The primary threat to the song sparrow and other riparian birds is the destruction of habitat, loss of water in riparian areas, and human disturbance (USFS, 2005). Long-term monitoring of song sparrow populations would provide a measure of forest management success in increasing the quality of riparian areas. Song sparrow was detected in the Project area at the Reservoir and below Littlerock Dam.

Aquatic Habitat (Arroyo toad). The arroyo toad occurs in semi-arid regions including valley-foothill, desert riparian, and desert wash habitat. This species breeds in shallow, gravelly streams, and rivers with sandy banks that typically contain willows, cottonwoods, and sycamores, and it has been known to utilize upland habitat within 2,000 meters (6,562 feet) of breeding habitat for foraging and wintering (USFWS, 2011).

This species is present in the Project area above Rocky Point upstream from the proposed grade control structure. The Forest Service has designated the Lower Little Rock Creek Critical Biological Land-Use Zone (CBLUZ) for the protection of arroyo toad, and defined allowable recreational activities in this CBLUZ. The distribution of arroyo toad in the Project area below Rocky Point is restricted to some degree from operation of the reservoir, exotic fish (i.e., bass), and from human use of the Reservoir (i.e., trampling, creek diversion, illegal OHV) during periods when the creek bed is not inundated.

C.3.1.7 Sensitive Vegetation Communities

Sensitive vegetation communities are defined by CDFG (2010) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." Sensitive vegetation communities in the Project area include southern cottonwood-willow riparian forest, Mojave riparian forest, riparian scrub, and Joshua tree woodland. Subsequent field surveys determined that areas mapped as Fremont cottonwood forest generally meet the classification requirements of southern cottonwood-willow riparian forest and Mojave riparian forest (See Table C.3-2 above and Figures C.3-3, C.3-4, and C.3-5).

C.3.1.8 Special-Status Plants

Approximately 24 special-status plant taxa have the potential to occur in the Project area. Figures C.3-10a and C.3-10b illustrate the known locations of special-status plants occurring in or near the Study Area (CDFW, 2015). Three special-status plants, Johnston's monkeyflower (*Mimulus johnstoni*), short-joint beavertail (*Opuntia basilaris* var. *brachyclada*), and Lemmon's syntrichopappus (*Syntrichopappus lemmonii*), were detected within the Vegetation Study Area during botanical surveys conducted from 2010–2014. None of these plants were detected in the Project area. Table C.3-4 lists the sensitive plant species that have the potential to occur in the Vegetation Study Area. Species descriptions having a low, moderate, or high potential to occur are described in Appendix C-5.

Each of these taxa were assessed for their potential to occur within the study area based on the following criteria:

- Present: Taxa were observed within the Study Area during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.

- **High:** Both a documented recent record (within 10 years) exists of the taxa within the Study Area or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa present within the Study Area.
- **Moderate:** Both a documented recent record (within 10 years) exists of the taxa within the Study Area or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal and/or limited within the Study Area or the Study Area is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the Study Area.
- **Low:** A historical record (over 10 years) exists of the taxa within the Study Area or general vicinity (approximately 10 miles) and the environmental conditions (including soil type) associated with taxa presence are marginal and/or limited within the Study Area.
- **Not Likely to Occur:** Species or sign not observed on the site, outside of the known range, and conditions unsuitable for occurrence.

Table C.3-4. Known and Potential Occurrence of Special-Status Plant Taxa within the Study Area			
Name	Status	Habitat	Potential for Occurrence
Federal or State Endangered or Threatened Species			
<i>Astragalus brauntonii</i> Braunton's milkvetch	CRPR 1B.1, FE	Coastal scrub and chaparral. Recent burns or disturbed areas. <2,300'. Los Angeles, Orange, and Ventura Counties.	Unlikely: The project area is outside of the historic range of the species. Suitable habitat is not present.
<i>Berberis nevini</i> Nevin's barberry	CRPR 1B.1, FE	Sandy to gravelly soils. Washes, chaparral, cismontane woodland, and coastal scrub. Generally found in lowlands or drainages. <2,200'.	Unlikely: The project area is outside of the historic range of the species. Suitable habitat is not present.
<i>Brodiaea filifolia</i> Thread-leaved brodiaea	CRPR 1B.1, FT	Grasslands and vernal pools, grassy openings in chaparral or coastal sage scrub, playas. 100-2,900'. Often found in clay. Southern base of San Gabriel Mtns. at Glendora and San Dimas & San Bernardino at Arrowhead Springs.	Unlikely: The project area is outside of the historic range of the species. Suitable habitat is not present.
<i>Chorizanthe parryi</i> var. <i>fernandina</i> San Fernando Valley spineflower	CRPR 1B.1, SE, FC, FSS	Sandy places in coastal or desert shrublands; historically from San Fernando Valley, adjacent foothills, and coastal Orange Co.; now known only in E Ventura & W LA Cos; Elev. 490-4,000 ft.; May-June.	Low: The project area is outside of the historic range of the species. Suitable habitat is, however, present.
<i>Dodechema leptoceras</i> Slender horned spineflower	CRPR 1B.1, FE	Sandy alluvial fans, benches, and terraces in coastal scrub, chaparral and cismontane woodland areas. 700-3,000'.	Low: The project area is outside of the historic range of the species. Suitable habitat is, however, present.
Forest Service Sensitive and CRPR Species			
<i>Acanthoscyphus parishii</i> var. <i>abramsii</i> Abram's flowery puncturebract	CRPR 4.2, FSS	In chaparral on soils derived from sandy or shale substrates at elevations of 3,750–6,750 feet.	Low. No suitable habitat in Project disturbance area, but could occur in chaparral on slopes surrounding the Project area.
<i>Androsace elongata</i> ssp. <i>acuta</i> California androsace	CRPR 4.2, FSW	Coastal scrub, chaparral, cismontane woodland, meadows and seeps, and valley and foothill grassland habitats. Elev. 492 to 3,936 ft. March to June.	Moderate: There are several populations on the foothill desert slopes of the San Gabriel and Liebre Mountains. Suitable habitat is present.

Table C.3-4. Known and Potential Occurrence of Special-Status Plant Taxa within the Study Area

Name	Status	Habitat	Potential for Occurrence
<i>Anomobryum julaceum</i> Slender silver moss	CRPR 4.2	Non-vascular moss that grows on mesic soils and rocks along creeks in broadleaf and coniferous forests. Elev. 300 to 3,000 ft. Year-round.	Low: This species is represented in southern California from a single collection made from the high elevations of the San Gabriel Mtns. Suitable habitat is present in the project area.
<i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i> San Gabriel manzanita	CRPR 1B.2, FSS	Large shrub that grows on rocky chaparral habitats; endemic to San Gabriel Mtns near Mill Creek Summit, Elev. 5,000 ft.; March.	Low: This species is known from the upper watershed but the project area is below the elevation range for this species. It has a low potential to disperse into the project area from the upper watershed.
<i>Arctostaphylos parryana</i> ssp. <i>tumescens</i> Interior manzanita	CRPR 4.3, FSS	Primarily found in montane chaparral, but may also be seen in riparian corridors, willow scrub and adjacent upland forest, ridgetops, ecotones between chaparral and woodland, Yellow Pine Forest, and Pinyon, Juniper, and Joshua Tree Woodland. 5500-7580'.	Low: This species is known from the upper watershed but the Project area is below the elevation range for this species. It has a low potential to disperse into the Project area from the upper watershed.
<i>Astragalus bicristatus</i> Crested Milk-vetch	CRPR 4.3, FSS	Open, rocky areas in coniferous forests. 5,500-9000'. Los Angeles, Riverside and San Bernardino Counties.	Unlikely: No suitable habitat present, the project area is well below the elevation range of the species.
<i>Astragalus lentiginosus</i> var. <i>antonius</i> San Antonio Milk-vetch	CRPR 1B.3, FSS	Open slopes in pine forest, 5,000-8,500', San Gabriel Mtns.	Unlikely: No suitable habitat present, the project area is well below the elevation range of the species.
<i>Botrychium crenulatum</i> Scalloped Moonwort	CRPR 2B.2, FSS	Bogs and fens, lower montane coniferous forest, meadows and seeps, and marshes & swamps (freshwater). 4,900-10,800'.	Unlikely: No suitable habitat present, the project area is well below the elevation range of the species.
<i>Calochortus clavatus</i> var. <i>clavatus</i> Club-haired mariposa lily	CRPR 4.3, FSS	Chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland at 75-1300 meter elevations	Low. No suitable habitat in Project disturbance area, but could occur in chaparral on slopes surrounding the Project area.
<i>Calochortus clavatus</i> var. <i>gracilis</i> Slender Mariposa Lily	CRPR 1B.2, FSS	Chaparral on slopes or in canyons below 1200 m, south base of San Gabriel and Sierra Pelona mountains.	Low. No suitable habitat in Project disturbance area, but could occur in chaparral on slopes surrounding the Project area.
<i>Calochortus fimbriatus</i> Late-Flowered Mariposa Lily	CRPR 1B.2, FSS	Dry, open coastal woodland; chaparral, 400-1500 m, locally up to 2500 m. Often in serpentine soil. Coast ranges, Ventura county west.	Unlikely: Not known to occur on the ANF and soil type not found in project area. Suitable habitat for this species not present in project area.
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer's mariposa lily	CRPR 1B.2, FSS	Wet meadows and seeps in lower montane coniferous forest and chaparral habitats. Elev. 3,281-7,841 ft. May-July.	Moderate: This species was not observed during recent surveys but is known from the general area.
<i>Calochortus plummerae</i> Plummer's mariposa lily	CRPR 4.2	Granitic rock outcrops or rocky soils of granitic origin, in lower montane coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland, and chaparral habitats. Elev. 328-5,577 ft. May-July	Low: The Project is just outside of the known geographic range for this species but suitable habitat is present within the project area.

Table C.3-4. Known and Potential Occurrence of Special-Status Plant Taxa within the Study Area			
Name	Status	Habitat	Potential for Occurrence
<i>Calochortus striatus</i> Alkali mariposa lily	CRPR 1B.2, FSS	Alkaline soils, in floodplains and springs in chaparral, chenopod scrub, and Mojavean desert scrub. Elev. 230-5,232 ft. April-June.	Low* : The species is known from alkaline soils in the Mojave Desert. Poor quality habitat was observed at the northern end of the haul roads but it is not expected in the project area.
<i>Calystegia piersonii</i> Pierson's morning-glory	CRPR 4.2	Shrublands and lower elev. forests; below about 5000 ft. elev.; northern San Gabriel Mts., Liebre Mts., and adjacent Mojave Desert. May-June.	Moderate : This species was not observed during recent surveys, but is known from the general area.
<i>Canbya candida</i> Pygmy-poppy	CRPR 4.2, FSS	Joshua tree woodland, Mojavean desert scrub, or pinyon and juniper woodland habitats with gravelly, granitic, or sandy soils. Elev. 1,968-4,790 ft. March-June.	High : Suitable habitat is present within the Vegetation Study Area and numerous historic records are known from the area. May be present at the proposed sediment disposal site at 47th Street.
<i>Castilleja gleasonii</i> Mt. Gleason paintbrush	CRPR 1B.2, SR, FSS	Rocky places within lower montane coniferous forest and pinyon and juniper woodland communities. Elev. 2,700-7,120. May-June.	Moderate : This species is known from higher elevation of the San Gabriel Mtns but several collections from lower elevations have been made. Suitable habitat is present.
<i>Castilleja plagiotoma</i> Mojave paintbrush	CRPR 4.3, FSS	Great Basin scrub, Joshua tree woodland, lower montane coniferous forest, and pinyon and juniper woodland habitats. Elev. 984-8,200 ft. April-June.	High : This species was not detected during recent surveys but suitable habitat is present within the Vegetation Study Area and it is known from the general vicinity of the Project.
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's Spineflower	CRPR 1B.1, FSS	Valley-floor and foothill habitats. Dry, sandy or gravelly soils in washes, alluvial benches, and in foothill microhabitats with unconsolidated soils and low vegetation cover. Coastal sage scrub, chaparral, alluvial fan scrub, and the ecotone between chaparral and oak woodland. 30-1,130 m. (100-3700ft)	Unlikely : No suitable habitat present, the project area is well outside of the known range of the species.
<i>Cladium californicum</i> California saw-grass	CRPR 2B.2, FSS	Alkaline marshes, swamps, springs (including hot springs), perennial streams, and ponds. In sunny or partly shaded areas by riparian trees. Soil is usually moist to wet, often alkaline, and may be clay or gravel. Immediately adjacent vegetation is usually riparian, such as palms or willows, and may be dense. 100-7,000'.	Low : Suitable habitat is present within the Vegetation Study Area, but it was not detected during recent surveys and is not known from the area.
<i>Claytonia lanceolata</i> var. <i>peirsonii</i> Peirson's Spring Beauty	CRPR 3.1, FSS	Gravelly conifer woodlands, scree slopes. 5,000-8,500'.	Unlikely : No suitable habitat present, the project area is well outside of the known range of the species.
<i>Deinandra mohavensis</i> Mojave tarplant	CRPR 1B.3, SE, FSS	Washes, seasonal creeks/seeps, openings in chaparral, disturbed areas. Not known from ANF, most occurrences in San Bernardino, San Jacinto mts. 900-1600 m.	Unlikely : Project area is well outside of the known range of the species.
<i>Drymocallis glandulos</i> ssp. <i>ewanii</i> Ewan's Cinquefoil	CRPR 1B.3, FSS	Seeps, springs, wet areas in central San Gabriel Mountains, 1900-2400 m	Low : Suitable habitat is present within the Vegetation Study Area, but it was not detected during recent surveys and is not known from the area.
<i>Dudleya cymosa</i> ssp. <i>crebrifolia</i> San Gabriel River Dudleya	CRPR 1B.2, FSS	On exposed granite outcroppings in CSS or chaparral areas. Fish Canyon, Lytle Creek area. 300-1100 m.	Unlikely : No suitable habitat present, the project area is well outside of the known range of the species.

Table C.3-4. Known and Potential Occurrence of Special-Status Plant Taxa within the Study Area			
Name	Status	Habitat	Potential for Occurrence
<i>Dudleya densiflora</i> San Gabriel Mountain Dudleya	CRPR 1B.1, FSS	Steep granitic canyon walls adjacent to chaparral, coastal scrub, and coniferous forest. Southeast San Gabriel Mountains. 900-1,700'	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Dudleya multicaulis</i> Many-stemmed Dudleya	CRPR 1B.2, FSS	Heavy soils, often clayey, coastal plain. Chaparral, coastal scrub, and valley & foothill grassland. <2,000'.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Eremegone macradenia</i> var. <i>arcuifolia</i> Forest Camp Sandwort	FSS	Ridgetops in chaparral (openings, granitic, usually oak dominated). 4,000-5,600'.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Eriogonum kennedyi</i> var. <i>alpigonum</i> Southern Alpine Buckwheat	CRPR 1B.3, FSS	Alpine boulder and rock fields, subalpine, granitic gravel, found on high peaks and ridgetops. 8,500-11,550'.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Eriogonum microthecum</i> var. <i>johnstonii</i> Johnston's Buckwheat	CRPR 1B.3, FSS	Rocky, subalpine coniferous forest and upper montane coniferous forest. 8,500-9,500'.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Galium grande</i> San Gabriel Bedstraw	CRPR 1B.2, FSS	Open, broad-leaved forest, open chaparral, cismontane woodland, and lower coniferous forest. Rocky slopes. 1,450-5,000'. San Gabriel Mtns.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Heuchera abramsii</i> Abram's Alumroot	CRPR 4.3, FSS	Rocky crevices in upper montane forest, 2800-3500 m.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Heuchera caespitosa</i> Urn-Flowered Alumroot	CRPR 4.3, FSS	Rocky crevices in montane conifer forest in San Gabriel Mountains, 1500-2500 m	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Horkelia cuneata</i> ssp. <i>Puberula</i> Mesa horkelia	CRPR 1B.1, FSS	Sandy or gravelly areas in coastal sage scrub, chaparral, or oak woodland. 50-850 m.	Unlikely: Project area is well outside of the known range of the species.
<i>Hulsea vestita</i> ssp. <i>gabrielensis</i> San Gabriel Mountains sunflower	CRPR 4.3, FSS	Rocky, subalpine coniferous forest, upper montane coniferous forest, talus slopes or rock outcroppings. 1500-2,900 m.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Hulsea vestita</i> ssp. <i>pygmaea</i> Pygmy Alpinegold	CRPR 1B.3, FSS	Gravelly sites of granitic substrate alpine areas or subalpine forest ; 2800-3900 m	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Imperata brevifolia</i> California satintail	CRPR 2B.1, FSS	Meadows and seeps within chaparral, coastal scrub, and Mojavean desert scrub communities. Elev. below 4,000 ft. September-May.	Low: Suitable habitat is present within the Vegetation Study Area, but it was not detected during recent surveys and is not known from the area.
<i>Lepechinia fragrans</i> Fragrant Pitcher Sage	CRPR 4.2, FSS	Chaparral areas, including those recovering from recent fire. Mt. Lukens, western Santa Monica Mountains. 20-1350 m.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.

Table C.3-4. Known and Potential Occurrence of Special-Status Plant Taxa within the Study Area			
Name	Status	Habitat	Potential for Occurrence
<i>Lepechinia rossii</i> Ross's Pitcher Sage	CRPR 1B.2, FSS	Rocky outcrops of reddish sedimentary rock, on north to northeast facing slopes; between 305-790 m in elevation. Generally associated with open areas and appears to be in greatest abundance following fire.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Lewisia brachycalyx</i> Short-sepaed Lewisia	CRPR 2B.2, FSS	Seasonally wet habitats within open coniferous forest; specifically in montane meadows or seeps and often in sandy soils	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Lilium humboldtii</i> <i>ssp. ocellatum</i> Ocellated Humboldt lily	CRPR 4.2, FSW	Riparian woodland openings within chaparral, cismontane woodland, coastal scrub, and lower montane coniferous forest communities; generally on gravelly soils within gullies. Elev. below 6,000 ft. March-July.	Low: This species is known from deep shaded canyons throughout the San Gabriel Mtns, but it was not detected during recent surveys and is not known from the area.
<i>Lilium parryi</i> Lemon lily	CRPR 1B.2, FSS	Meadows and seeps within lower and upper montane coniferous forests communities. Elev. 4,000-9,000 ft. July-August.	Low: Known from the upper reaches of the drainage but the project area is below the elevation range for this species and the project area lacks suitable habitats.
<i>Linanthus concinnus</i> San Gabriel linanthus	CRPR 1B.2, FSS	Dry rocky slopes within chaparral and montane coniferous forest communities. Elev. 5,000-9,200 ft. May-July.	Unlikely: Known from higher elevation areas of the San Gabriel Mtns, the project area is well below the elevation range of the species.
<i>Linanthus orcuttii</i> Orcutt's Linanthus	CRPR 1B.3	Openings in chaparral, lower montane coniferous forest, and pinyon-juniper woodland at elevations of 3,000–7,050 feet. Usually in vernal moist openings.	Low. No suitable habitat in Project disturbance area, but could occur in chaparral on slopes surrounding the Project area.
<i>Loeflingia squarrosa</i> <i>var. artemisiarum</i> Sagebrush loeflingia	CRPR 2B.2	Sandy soils (dunes) in Great Basin scrub and Sonoran desert scrub. Elev. 2,200-5,300 ft. April-May	Low*: The species is known from very few locations in the vicinity of alkali flats to the north of the project area. Poor quality habitat was observed at the northern end of the haul roads but it is not expected in the project area.
<i>Lupinus peirsonii</i> Peirson's lupine	CRPR 1B.3, FSS	Gravelly or rocky slopes within Joshua tree woodland, lower and upper montane coniferous forest, and pinyon and juniper woodland communities. Elev. 3,200-8,200 ft. April-May.	Low: This species is not known from the project vicinity, but occurs in the upper reaches of the watershed. It could be present within the vegetation study area as a wash-down waif species but is not expected to persist in the Reservoir.
<i>Malacothamnus davidsonii</i> Davidson's bush-mallow	CRPR 1B.2	Chaparral, cismontane woodland, coastal scrub, and riparian woodland. Elev. 300-2,500 ft. June-January.	Low: Very few records of this species within the general vicinity of the project area.
<i>Mimulus johnstoni</i> Johnston's monkeyflower	CRPR 4.3	Gravelly or rocky slopes within Joshua tree woodland, lower and upper montane coniferous forest, and pinyon and juniper woodland communities. Elev. 3,200 0-6,000 ft. April-May.	Present*: Observed within the Vegetation Study Area, just downstream of Littlerock Dam on a steep sandy slope, not observed within the project area.
<i>Monardella australis</i> <i>ssp. Jokerstii</i> Jokerst's Monardella	CRPR 1B.1, FSS	Found at elevations from 4430-5740 ft, with possible waifs as low as 525 ft. On steep scree or talus slopes between breccia, ravines, canyon bottoms, and secondary alluvial benches along drainages and washes. In loamy soil derived from granite or mixed alluvium. In chaparral, montane coniferous forest or woodland, or sometimes riparian.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.

Table C.3-4. Known and Potential Occurrence of Special-Status Plant Taxa within the Study Area			
Name	Status	Habitat	Potential for Occurrence
<i>Monardella macrantha</i> ssp. <i>hallii</i> Hall's Monardella	CRPR 1B.3, FSS	Chaparral, broadleaved upland woodland, cismontane woodland, coniferous forest (usually Bigcone Spruce), and valley & foothill grassland. 2,000-6,600'. San Gabriel and San Bernardino Mtns.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Monardella viridis</i> ssp. <i>saxicola</i> Rock Monardella	CRPR 4.3, FSS	Broadleaved upland forest, montane chaparral, coniferous forest, and cismontane woodland. Usually in dry, rocky areas. 1,650-6,000'. San Gabriel Mtns.	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Navarretia peninsularis</i> Baja Navarretia	CRPR 1B.2, FSS	Wet areas in open forest or chaparral. 4,950-7,600'.	Unlikely: No suitable habitat present, the project area is well outside of the known range and elevation of the species.
<i>Nemacladus secundiflorus</i> var. <i>robbinsonii</i> Robbins' nemacladus	CRPR 1B.2, FSS	Openings in chaparral and foothill grasslands; Elev. 875-4250 ft.; April-June.	Unlikely: The subspecies is known from a single location in the San Gabriel Mtns, east of the Project area. No suitable habitat is present.
<i>Opuntia basilaris</i> var. <i>brachyclada</i> Short-joint beavertail	CRPR 1B.2, FSS	Open chaparral, juniper woodland, or similar woodland communities. Elev. 1,394-5,900 ft. April-June.	Present: This variety was observed at two locations within the Vegetation Study Area just outside of the Project area.
<i>Oreonana vestita</i> Woolly mountain-parsley	CRPR 1B.3, FSS	Ridge tops and on rocky soils such as dry gravel or talus in lower and upper montane coniferous forest and subalpine coniferous forest at elevations of 6,500–11,500 feet.	Unlikely. This species is not known from the project vicinity and the project area is well below the elevation range of this species.
<i>Orobanche valida</i> ssp. <i>valida</i> Rock Creek broomrape	CRPR 1B.2, FSS	Granitic soils within chaparral and pinyon and juniper Woodland communities. Elev. 4,000-7,000 ft. May-July.	Unlikely: This species is not known from the project vicinity and the project area is below the elevation range of this species.
<i>Oxytropis oreophila</i> var. <i>oreophila</i> Rock-loving Oxytrope	CRPR 2B.3, FSS	Open sunny areas; on gravelly or rocky flats, slopes, ridges, or summits; or in alpine boulder fields or fell-fields. Surrounding vegetation is usually composed of alpine cushion plants when above treeline, or subalpine coniferous forest at lower elevations. Soils are usually dry, sandy to rocky. 8860-12500 ft	Unlikely: No suitable habitat present, the project area is well outside of the known range and elevation of the species.
<i>Parnassia cirrata</i> var. <i>cirrata</i> Fringed Grass-Of-Parnassus	CRPR 1B.3, FSS	Mesic areas in open, broad-leaved forest, open chaparral, cismontane woodland, and lower forest. Rocky slopes. 455-1,525 m. San Gabriel Mtns.	Low. No suitable habitat in Project disturbance area, but could occur in chaparral on slopes surrounding the Project area.
<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i> Southern Skullcap	CRPR 1B.2, FSS	Gravelly streambanks and mesic sites, chaparral, cismontane woodland, lower montane conifer forest. 425-2000 m. Mainly in Riverside, San Diego counties.	Unlikely: Project area is well outside of the known range of the species.
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i> Parish's checkerbloom	CRPR 1B.2, FSS	Chaparral, cismontane woodland, and montane conifer habitat at elevations of 3,300–8,200 feet (1,000–2,500 meters).	Unlikely: No suitable habitat present, the project area is well outside of the known range of the species.
<i>Sidalcea neomexicana</i> Salt Spring Checkerbloom	CRPR 2B.2, FSS	Flat or gently sloped, moist alkaline areas such as springs, marshes, bogs, swamps, or playas. Also hillsides, roadcuts and roadsides, in pastures and fields, and in meadows. 100-5020 ft	Low: Potential habitat is present within the Vegetation Study Area, but it was not detected during recent surveys and is not known from the area.

Table C.3-4. Known and Potential Occurrence of Special-Status Plant Taxa within the Study Area			
Name	Status	Habitat	Potential for Occurrence
<i>Sidotheca caryophylloides</i> Chickweed Starry Puncturebract	CRPR 4.3, FSS	Sandy or gravelly flats, washes, and slopes, chaparral, montane conifer woodlands; 1300-2600 m	Low: Potential habitat is present within the Vegetation Study Area, but it was not detected during recent surveys and is not known from the area. Nearest record over 10 miles south.
<i>Streptanthus campestris</i> Southern Jewelflower	CRPR 1B.3, FSS	Rocky openings in chaparral, conifer forest, oak woodland, 600-2790 m. High variation in habitat and elevation of species. San Diego, Riverside, San Bernardino counties.	Unlikely: Project area is well outside of the known range of the species.
<i>Stylocline masonii</i> Mason's neststraw	CRPR 1B.1, FSS	Ephemeral annual; sandy washes, saltbush shrubland, pinyon-juniper woodland, etc., western Central Valley (Monterey Co. south to Kern Co.) and Soledad Cyn. wash in LA Co., below about 4,000 ft. elev.; March-April.	Low: This species is not known from the project vicinity but suitable habitat is present.
<i>Symphotrichum defoliatum</i> San Bernardino aster	CRPR 1B.2, FSS	Occurs near ditches, springs and seeps in cismontane woodland, valley foothill grasslands, coastal scrub, lower montane coniferous forest, meadows, swamps and marshes from 2 to 2040 meters. (7-6700 ft)	Unlikely: Project area is well outside of the known range of the species.
<i>Symphotrichum greatae</i> Greata's aster	CRPR 1B.3	Woodlands, chaparral, lower montane forests; around springs or mesic sites, Elev.1,000–6,600 ft.; San Gabriel Mts. and Liebre Mts. August-October.	Low: This species is known from the upper watershed and although the habitat in the project area is not ideal, it has some potential to occur.
<i>Syntrichopappus lemmonii</i> Lemmon's syntrichopappus	CRPR 4.3, FSW	Chaparral, Joshua tree woodland, and pinyon and juniper woodlands within sandy or gravelly soils. Elev. 1,640-6,004 ft. April-May.	Present*: This species was detected within the vegetation study area, just downstream of the dam. It was growing on a steep talus slope adjacent to the haul road. It was not detected within the Project area.
<i>Thelypteris puberula</i> var. <i>sonorensis</i> Sonoran Maiden Fern	CRPR 2B.2, FSS	Streams, meadows, and seeps below 550 m.	Unlikely: Project area is well outside of the known range of the species.
<i>Thysanocarpus rigidus</i> Rigid Fringepod	CRPR 1B.2, FSS	Often dry rocky slopes or ridges, or generally open areas. It grows between 1970-7200 ft in elevation, usually in pine and oak woodlands.	Low. No suitable habitat in Project disturbance area, but could occur in open areas in chaparral on the slopes surrounding the Project area.

Source: CDFW, 2014

SE – California-listed Endangered

ST – California-listed Threatened

SR – California-listed Rare

FSS – USDA Forest Service Sensitive Species

FSW – USDA Forest Service Watch List

CRPR 1B – Rare or endangered in California and elsewhere

CRPR 2 – Rare or endangered in California, more common elsewhere

CRPR 3 – More information needed (Review List)

CRPR 4 – Limited Distribution (Watch List)

0.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2 = Fairly threatened in California (20-80% occurrences threatened)

0.3 = Not very threatened in California (<20% of occurrences threatened or no current threats known)

* = likelihood with an asterisk is based only on habitat adjacent to the haul roads and not within the project area.

C.3.1.9 Special-Status Wildlife

Special-status taxa include those listed as threatened or endangered under the federal or California Endangered Species Acts, taxa proposed for listing, Species of Special Concern, and other taxa which have been identified by the USFWS and CDFW, and Forest Service Sensitive species. Figures C.3-11a and C.3-11b illustrates the known locations of special-status wildlife occurring within or near the Study Area (CDFW, 2015). The specific habitat requirements and the locations of known occurrences of each special-status wildlife taxa were the principal criteria used for inclusion in the list of taxa potentially occurring within the Study Area. There are currently 87 special-status wildlife taxa documented within the general region of the Study Area.

Each of the 87 taxa were assessed for their potential to occur within the Study Area based on the following criteria:

- **Present:** Taxa (or sign) were observed in the Study Area or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by Forest Service, CDFW, USFWS, or local experts.
- **High:** Habitat (including soils) for the taxa occurs on site and a known occurrence occurs within the Study Area or adjacent areas (within 5 miles of the site) within the past 20 years; however, these taxa were not detected during the most recent surveys.
- **Moderate:** Habitat (including soils) for the taxa occurs on site and a known regional record occurs within the database search, but not within 5 miles of the site or within the past 20 years; or, a known occurrence occurs within 5 miles of the site and within the past 20 years and marginal or limited amounts of habitat occurs on site; or, the taxa's range includes the geographic area and suitable habitat exists.
- **Low:** Limited habitat for the taxa occurs on site and no known occurrences were found within the database search and the taxa's range includes the geographic area.
- **Not Likely to Occur:** Species or sign not observed on the site, outside of the known range, and conditions unsuitable for occurrence.

Twenty taxa were observed or considered in or adjacent to the Study Area. The remaining 67 taxa have a low, moderate, or high potential to occur based on existing recorded occurrences, known geographic range, and the presence of suitable habitat (See Table C.3-5). Special-status wildlife species having a low, moderate, or high potential to occur are described in Appendix C-5.

Special-status invertebrates or fish were not detected in the Study Area. Arroyo toad, federally listed as endangered and a CDFW Species of Special Concern, was the only sensitive amphibian detected within Little Rock Creek. This species was detected upstream of Rocky Point and was routinely observed during surveys. The USFWS proposed to downlist the status of this species from Endangered to Threatened in March 2014. The USFWS withdrew the proposed rule on December 23, 2015 and this species remains federally listed as Endangered.

A number of special-status reptiles were observed in the Project Study Area. A single coast horned lizard (*Phrynosoma blainvillii*), a CDFW Species of Special Concern, was observed in a sandy drainage adjacent to the main access road to the Reservoir. Coastal whiptail (*Aspidoscelis tigris*), a CDFW Special Animal, was observed along the fringes of the riparian areas just below the dam. Southwestern pond turtle (*Actinemys marmorata*) and two-striped garter snake (*T. hammondi*), both CDFW Species of Special Concern and Forest Service Sensitive Species, were observed within aquatic habitat above and below the dam.

Desert tortoise has not been observed in the Project area but habitat for this species is present at the proposed 47th Street East sediment disposal site and along the haul routes. Historically, desert tortoises were likely abundant in the Project area and likely utilized the foothills of the ANF. Although habitat on the sediment disposal site has been mapped as suitable for desert tortoise by the DRECP and USGS (see Figure C.3-9), it is unlikely this species is present in this location. No tortoises or sign of tortoises were observed during surveys.

Seven special-status songbirds were detected within riparian areas of the Study Area and included least Bell's vireo (*Vireo bellii pusillus*), willow flycatcher (*Empidonax traillii*), Lawrence's goldfinch (*Spinus lawrencei*), Vaux's swift (*Chaetura vauxi*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), summer tanager (*Piranga rubra cooperi*), and yellow warbler (*Setophaga petechia*).

Sharp-shinned hawk (*Accipiter striatus*), a CDFW Watch List species, and bald eagle (*Haliaeetus leucocephalus*) were observed at the Reservoir. Bald eagle is a state-listed endangered species and a Forest Service Sensitive Species that appears to be a routine winter visitor to the Reservoir. Although not observed, Swainson's hawk could forage at the 47th Street East sediment disposal site. This species is not expected to nest at the Reservoir.

Sensitive mammals detected at the site included the pallid bat, a CDFW Species of Special Concern and Forest Service Sensitive Species, and Yuma myotis, a CDFW Special Animal. Although not detected during surveys, Nelson's (San Gabriel Mountains) bighorn sheep (*Ovis canadensis nelsoni*) have been observed upstream of the Reservoir by CDFW biologists (L. Welch, personal communication, 10 September 2012).

Mohave ground squirrel has not been observed in the Project area. Historically, this species was widely distributed in the region possibly including the proposed sediment disposal site. However, a 2015 survey determined that the sediment disposal site does not contain suitable habitat for this species (Phoenix, 2015).

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area					
Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
INVERTEBRATES					
<i>Callophrys mossii hidakupa</i>	San Gabriel Mountains elfin	SA, FSS	Endemic to the San Gabriel and San Bernardino Mountains at elevations of 3,000-5,500 feet, typically on steep, rocky, north-facing cliffs. The larval host plant is a stonecrop (<i>Sedum spathulifolium</i>).	There are no known recent records for this species in the Study Area. The Study Area lacks suitable habitat, including host plant.	Not likely to occur
<i>Helminthoglypta traskii</i>	Trask shoulderband snail	SA	Terrestrial; southern California endemic known from Ventura, Los Angeles, Orange, and San Diego Counties; prefers coastal sage scrub and chaparral.	There are no known recent records for this species within a 20 mile radius of the Study Area. However the Study Area is located within the known geographic distribution for this species (Magney, 2011); suitable habitat is limited within the Study Area.	Moderate
<i>Plebejus saepiolus aureolus</i>	San Gabriel Mountains blue butterfly	SA, FSS	Type locality is wet meadow seep in yellow pine forest. The foodplant is <i>Trifolium wormskioldii</i> .	There are no known recent records for this species in the Study Area. The Study Area lacks suitable habitat, including foodplant.	Not likely to occur
<i>Plebulina emigdonis</i>	San Emigdio blue butterfly	SA, FSS	Often near streambeds, washes, or alkaline areas. Associated with four-wing saltbush (<i>Atriplex canescens</i>) and quail brush (<i>Atriplex lentiformis</i>).	There are no known recent records for this species in the Study Area. The Study Area is located within the known geographic distribution for this species. Suitable habitat occurs within limited portions of the Study Area.	Low
FISH					
<i>Catostomus santaanae</i>	Santa Ana sucker	FT, CSC	Typically inhabits small, shallow streams and rivers less than 23 feet (7 meters) wide where water temperature is generally below 72 ° F (22 ° C), and where currents range from swift to sluggish	This species has not been documented within the Study Area. The Study Area is located outside of the known geographic distribution for this species. The closest known record of this species is from the Santa Clara River approximately 11–12 miles to the west of the Study Area.	Not likely to occur
<i>Gasterosteus aculeatus williamsoni</i>	Unarmored threespine stickleback	FE, SE, CFP	Slow-moving and backwater areas of coastal and inland streams.	This species has not been documented within the Study Area. The Study Area is located outside of the known geographic distribution for this species. The closest known record of this species is from the Santa Clara River approximately 12–13 miles to the west of the Study Area.	Not likely to occur
<i>Gila orcuttii</i>	Arroyo chub	CSC, FSS	Los Angeles Basin southern coastal streams; slow water stream sections with mud or sand bottoms; feeds heavily on aquatic vegetation and associated invertebrates.	There are no known recent records for this species in the Study Area. The Study Area is not located within the known geographic distribution for this species. The nearest known recorded occurrence of this species is over 15 miles to the southeast in the San Gabriel River.	Not likely to occur

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area					
Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Rhinichthys osculus</i> ssp. 8	Santa Ana speckled dace	CSC, FSS	Inhabit various stream and channel types, small springs, brooks, and pools in intermittent streams and perennial rivers.	There are no known recent records for this species in the Study Area. The Study Area is not located within the known geographic distribution for this species. The closest known record of this species is from the Big Tujunga Creek approximately 13–15 miles to the west of the Study Area.	Not likely to occur
AMPHIBIANS					
<i>Anaxyrus californicus</i>	Arroyo toad	FE, CSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash; rivers with sandy banks, willows, cottonwoods, and/or sycamores.	This species has been documented within the Study Area. More specifically, arroyo toads have been recorded from Rocky Point (at the Reservoir) and upstream within Little Rock Creek past the confluence with Santiago Creek. Arroyo toads have also been detected within Santiago Creek.	Present
<i>Batrachoseps gabrieli</i>	San Gabriel Mtns. slender salamander	FSS, SA	Known only from 13 sites within forest communities of the San Gabriel Mountains. Primarily inhabits talus and large rocks, logs, and bark during periods of surface activity.	Not known to occur in Study Area but could potentially utilize Little Rock Creek and adjacent riparian areas. The Study Area is outside of the known range of this species but it is known from the portions of the San Gabriel Mountains to the south of the Study Area.	Low
<i>Ensatina eschscholtzii croceater</i>	Yellow-blotched salamander	CSC, FSS	Litter and debris of oak woodland, pine dominated open woodland, and fir dominated open forest.	Suitable habitat does not occur in the Study Area, and it is well outside the known range of this subspecies.	Not likely to occur
<i>Rana boylei</i>	Foothill yellow-legged frog	CSC, FSS	Inhabits shallow, small to medium-sized, rocky streams, from sea level to about 6,365 feet.	Although suitable habitat occurs within portions of the Study Area, it is outside the known range of this subspecies. This species is believed to be extirpated from the San Gabriel Mountains.	Not likely to occur
<i>Rana draytonii</i>	California red-legged frog	FT, CSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation; requires 11-20 weeks of permanent water for larval development; must have access to aestivation habitat.	Although suitable habitat occurs within portions of the Study Area, it is outside the known range of this subspecies.	Not likely to occur
<i>Rana muscosa</i>	Sierra Madre (= southern mountain) yellow-legged frog	FE, SE, CSC	Prefers partly shaded, shallow streams with a rocky substrate; requires a minimum of 15 weeks of permanent water for metamorphosis.	The largest known population of this species occurs within the upper portions of the Little Rock Creek watershed. Pockets of suitable habitat may occur when flows and/or pools are present within Little Rock Creek; this species has not been detected within the Study Area.	Not likely to occur

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Spea hammondi</i>	Western spadefoot	CSC	Occurs in numerous habitat types, primarily in grasslands but can be found in valley-foothill hardwood woodlands, sage scrubs, chaparral where pooled/ponded water, supporting typically clay-rich soils, remains through early spring (April/May); in some areas, vernal pools, stock ponds, and road pools are essential for breeding, egg-laying, and larval development.	There are no known records for this species in the Study Area within a 15 mile radius. The Study Area is located just outside the known geographic distribution for this species. Pockets of suitable habitat occur within the Study Area.	Low
<i>Taricha torosa</i>	Coast Range newt	CSC	Historically distributed in coastal drainages from central Mendocino County in the North Coast Ranges, south to Boulder Creek, San Diego County. Breeds in ponds, reservoirs, streams; terrestrial individuals occupy various adjacent upland habitats, including grasslands, woodlands, and forests.	Suitable habitat is present onsite above Rocky Point. Known from locations throughout the San Gabriel Mountains.	Moderate
REPTILES					
<i>Actinemys marmorata</i>	South western pond turtle	CSC, FSS	Inhabits permanent or nearly permanent bodies of water in various habitat types; requires basking sites such as partially submerged logs, vegetation mats, or open mud banks.	This species was observed within the Study Area (above and below the Reservoir) during surveys conducted in 2012. The Study Area is located within the known geographic distribution for this species.	Present
<i>Anniella pulchra pulchra</i>	Silvery (=California) legless lizard	CSC, FSS	Sandy or loose loamy soils under sparse vegetation; soil moisture is essential; prefer soils with high moisture content.	This species was detected within the Study Area under a small woodpile, adjacent to the Reservoir, during surveys conducted in 2012.	Present
<i>Aspidoscelis tigris stejnegeri</i>	Coastal whiptail	SA	Found in deserts and semi-arid areas with sparse vegetation and open areas; also found in woodland and riparian habitats; substrates may be firm soil, sandy, or rocky.	This species was documented within the Study Area during surveys conducted in 2012. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Study Area.	Present
<i>Charina bottae umbratica</i>	Southern rubber boa	ST	Occurs in conifer forests near streams and meadows. Known to occur in the Transverse Range, San Bernardino Mountains, and thought to be extirpated from the San Gabriel Mountains.	Thought to be extirpated from the San Gabriel Mountains, but focused surveys have not been conducted. Suitable habitat does not occur in the Study Area.	Not likely to occur

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Charina trivirgata roseofusca</i> (<i>Lichanura orcutti</i>)	Coastal rosy boa	SA, FSS	Fairly dense vegetation and rocky habitat within desert and chaparral from the coast to Mojave and Colorado deserts.	Suitable habitat is present within the Study Area outside the perimeter of the Reservoir. This species was reported approximately 6 miles west of the Study Area in June 2009 along a transmission line corridor.	Moderate
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	SA, FSS	Canyons with rocky outcrops or rocky talus slopes in conifer forest or chaparral habitats.	Suitable habit occurs within the Study Area and this species was observed during surveys.	Present
<i>Gopherus agassizii</i>	Desert tortoise	FT, ST	Inhabits semi-arid grasslands, gravelly desert washes, canyon bottoms and rocky hillsides. Associated plant species includes creosote bush, Joshua tree, cheese bush, saltbush, grasses, and cacti.	The Study Area lies outside of the known range of this species; portions of the identified haul routes, however, do occur within the range and have suitable habitat. Habitat on the sediment disposal site has been mapped as suitable for desert tortoise by the DRECP.	Not likely to occur
<i>Lampropeltis zonata parvirubra</i>	San Bernardino mountain kingsnake (California mountain kingsnake, San Bernardino population)	CSC, FSS	Inhabits canyons with low to moderate tree canopy, with rock outcrops or talus, frequently in association with big cone spruce and chaparral vegetation at lower elevations.	Suitable habitat occurs within the Study Area.	Moderate
<i>Phrynosoma blainvillii</i>	Coast (San Diego) horned lizard	CSC,	A variety of habitats, including coastal sage scrub, chaparral, oak woodland, riparian woodland, and coniferous forest. Friable, sandy soils in areas with an abundant prey base of native ants are key habitat components.	This species was documented within a sandy drainage, adjacent to the main access road through the Reservoir, during surveys conducted in 2012. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs in portions of the Study Area.	Present
<i>Thamnophis hammondi</i>	Two-striped garter snake	CSC, FSS	Highly aquatic; found in or near permanent fresh water; often along streams with rocky beds and riparian growth.	This species was documented within the Study Area downstream of the dam and upstream of Rocky Point during surveys conducted in 2012. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs throughout the Study Area.	Present
BIRDS					
<i>Accipiter cooperii</i>	Cooper's hawk	WL	Woodland, chiefly of open, interrupted, or marginal type; nest sites mainly in riparian growths of deciduous trees.	The eBird online database documents sightings of this species at the Reservoir and the CNDDDB reports a historic occurrence approximately 8 miles northwest of the Study Area. These sightings do not indicate if the individuals were foraging, passing through, or nesting. Suitable habitat is present within the riparian areas of the Reservoir perimeter and Little Rock Creek.	Present (non-nesting)
<i>Accipiter gentilis</i>	Northern goshawk	CSC, FSS	Nests in old-growth stands of conifer and conifer/hardwood forests.	Suitable nesting habitat for this species does not occur within the Study Area and is highly fragmented within the Angeles National Forest.	Not likely to occur

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Accipiter striatus</i>	Sharp-shinned hawk	WL	Prefers, but not restricted to riparian habitats; breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats; requires north-facing slopes with perches.	This species was observed within the Study area during surveys conducted in 2010 as was presumed to be overwintering. No nesting activity was observed.	Present
<i>Agelaius tricolor</i>	Tricolored blackbird	SE, CSC, BCC	Highly colonial species; requires open water, protected nesting substrate, and foraging areas with insect prey within a few kilometers of colony.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; suitable breeding and foraging habitat occurs, depending on water levels, within the upper extents of the Reservoir (changes year to year). Nearest recorded occurrence is approximately seven miles northwest of the Study Area in Lake Palmdale.	Moderate
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	WL	Resident in southern California coastal sage scrub and sparse mixed chaparral; frequents relatively steep, often rocky hillsides with grass and forb patches.	This species was observed within the Study Area during surveys conducted in 2012; breeding was confirmed within the Study Area.	Present
<i>Artemisiospiza belli belli</i>	Bell's sage sparrow	WL, BCC	Found in shrubby habitats including coastal sage scrub and chaparral, primarily of the chamise type.	There are no known records for this species in the Study Area; suitable habitat is present within the Study Area outside of the Reservoir footprint. Nearest recorded occurrence, from 2005, is approximately 13 miles northwest of the Study Area.	Moderate
<i>Aquila chrysaetos</i>	Golden eagle	BGEPA, BCC, CFP, WL	Forages in open grasslands, desert scrub and agricultural fields. Nests on ledges on cliff faces, rock outcrops and occasionally in large trees.	There are no known records for this species within the Study Area; limited suitable nesting habitat for this species occurs within the Study Area but does occur on portions of the ANF. Suitable foraging habitat is present within Study Area.	Moderate (nesting)/High (foraging)
<i>Ardea herodias</i>	Great blue heron	SA	Rookery sites typically occur in groves of large trees within proximity to aquatic foraging areas of streams, wetlands, and grasslands.	This species was documented in the Study Area during surveys conducted in 2012. The Study Area is located within the known geographic distribution for this species; limited suitable rookery habitat occurs within the eastern portions of the Study Area within and adjacent to the Reservoir, suitable foraging habitat occurs throughout the Study Area.	Present (No rookery observed)
<i>Asio flammeus</i>	Short-eared owl	CSC	Usually occurs in open areas with few trees, such as grasslands, prairies, dunes, meadows, agricultural fields, emergent wetlands; requires dense vegetation for cover.	There are no known recent records for this species in the Study Area; suitable habitat is not present within the Study Area. Limited suitable habitat may be present along the proposed haul routes.	Low**
<i>Asio otus</i>	Long-eared owl	CSC	Breeds in thickly vegetated desert washes and oases, montane coniferous forests and in riparian and pinyon-juniper woodlands. Requires adjacent open habitats for foraging.	Suitable habit occurs within the Study Area; however, there are no known reports of this species within or adjacent to the Study Area. This species is known to occur on portions of the ANF to the southwest of the Study Area.	Moderate

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Athene cunicularia</i>	Burrowing owl	BCC, CSC	Open, dry perennial or annual grasslands, deserts, and scrublands characterized by low-growing vegetation; subterranean nester, dependent upon burrowing mammals, particularly California ground squirrels.	There are no known records for this species in the Study Area; nearest CNDDDB record for this species occurs approximately 10 miles to the northwest. While suitable habitat for this species does not occur within the Study Area it does occur along portions of the proposed haul routes.	Moderate**
<i>Buteo regalis</i>	Ferruginous hawk	BCC, WL	Forages in grasslands and agricultural fields.	There are no known records for this species in the Study Area; nearest CNDDDB record for this species occurs approximately 10 miles to the northwest. This species is a known winter resident in the Antelope Valley. Limited foraging habitat is present within the Study Area.	Moderate
<i>Buteo swainsoni</i>	Swainson's hawk	ST, BCC	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannahs.	Limited suitable nesting habitat is present within the Study Area; there are no known records for this species within the Study Area. This species may move through the Study Area during migration and while foraging.	Moderate
<i>Calypte costae</i>	Costa's hummingbird	SA	Primarily occurs in desert wash, edges of desert riparian and valley-foothill riparian, coastal scrub, desert scrub, low-elevation chaparral.	This species was documented during surveys within the Study Area in 2012. Suitable habitat is present within the Study Area.	Present
<i>Chaetura vauxi vauxi</i>	Vaux's swift	CSC	Breeds in coniferous and mixed coniferous forests; requires large-diameter, hollow trees for breeding and roosting; forages in areas of open water where insect prey congregates.	This species was documented during surveys within the Study Area in May 2012 although the breeding status of the individuals was not confirmed.	Present
<i>Charadrius montanus</i>	Mountain plover	BCC, CSC	Winters in short grasslands and agricultural fields. Breeds in short-grass prairies outside of California.	Suitable habitat is not present within the Study Area; there are no known records for this species in the Study Area.	Not likely to occur
<i>Circus cyaneus</i>	Northern harrier	CSC	Prefer open country, grasslands, steppes, wetlands, meadows, agriculture fields; roost and nest on ground in shrubby vegetation often at edge of marshes.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; suitable breeding and foraging habitat occurs within the Study Area.	Moderate
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	FT, SE, BCC, FSS	Nests along the broad, lower flood-bottoms of larger river systems; also nests in riparian forests and riparian jungles of willow often mixed with cottonwoods, with an understory of blackberry, nettles, or wild grape.	There are no known records for this species in the Study Area; there are no CNDDDB records for this species within a 15 mile radius of the Study Area; the Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat does not occur in the Study Area.	Not likely to occur

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Dendroica petechia brewsteri</i>	Yellow warbler	BCC, CSC	Riparian plant associations; prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging.	This species was documented within the Study Area during surveys conducted in 2012 and was noted as a potential breeding resident; the Study Area is located within the known geographic distribution for this species; suitable breeding and foraging habitat occurs in the Study Area.	Present
<i>Elanus leucurus</i>	White-tailed kite	CFP	Typically nests at lower elevations in riparian trees, including oaks, willows, and cottonwoods; forages over open country.	There are no known records for this species in the Study Area or surrounding areas. The Study Area is located within the known geographic distribution for this species; limited breeding and foraging habitat occurs in the Study Area.	Low
<i>Empidonax traillii</i>	Willow flycatcher	SE	Moist, shrubby areas, often with standing or running water for breeding, and winters in shrubby clearings and early successional growth	There are no known breeding records for this species in the Study Area or surrounding areas. The Study Area is located within the known geographic distribution for this species; and 5 willow flycatchers of undetermined subspecies were observed below the Dam and in Littlerock Creek during Project surveys in May 2012. Suitable breeding habitat is not present within the Study Area as this species prefers riparian areas of greater density than are present. Suitable foraging habitat occurs throughout the Study Area.	Present (Non-nesting migrants)
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	FE, SE	Riparian woodlands in southern California.	There are no known breeding records for this species in the Study Area or surrounding areas. The Study Area is located within the known geographic distribution for this species. Willow flycatchers of undetermined subspecies were observed below the Dam and in Littlerock Creek during Project surveys in May 2012. Suitable breeding habitat is not present within the Study Area as this species prefers riparian areas of greater density than are present. Suitable foraging habitat occurs throughout the Study Area.	Potentially Present (Non-nesting migrants)
<i>Eremophila alpestris actia</i>	California horned lark	WL	Occurs in open habitats, forages in bare dirt in short and/or sparse grassland and areas of scattered shrubs.	There are no known records for this species in the Study Area; there are no CNDDDB records for this species within a 15 mile radius of the Study Area. Limited breeding and foraging habitat occurs in the Study Area.	Low
<i>Falco columbarius</i>	Merlin	WL	Wide-variety of habitats including marshes, deserts, seacoasts, open woodlands, fields.	There are no known records for this species in the Study Area or surrounding areas; This species is a winter resident that does not breed in California; the Study Area is located within the known geographic winter distribution for this species; suitable foraging habitat occurs throughout the Study Area.	Moderate
<i>Falco mexicanus</i>	Prairie falcon	BCC, WL	Rare in southern California; nests along cliff faces or rocky outcrops; forages over open spaces, agricultural fields.	There are no known records for this species in the Study Area. The CNDDDB reports one historic occurrence approximately 10 miles to the west of the Study Area. Marginal (at best) nesting habitat occurs within the Study Area; suitable foraging habitat occurs throughout the Study Area.	Low

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Falco peregrinus anatum</i>	American peregrine falcon	BCC, CFP	Occurs in various open habitats, especially where suitable nesting cliffs present.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; suitable breeding habitat does not occur within but may be present in areas adjacent to the Study Area; foraging habitat occurs throughout the Study Area.	Low
<i>Gymnogyps californianus</i>	California condor	FE, SE, CFP	Nests in caves, crevices, behind rock slabs, or on large ledges on high sandstone cliffs; requires vast expanses of open savannah, grasslands, and foothill chaparral with cliffs, large trees and snags for roosting and nesting.	There are no known records for this species in the Study Area. The ANF is within the range of the condor and this wide ranging species has been documented as using the Forest for foraging, loitering, and roosting. Suitable nesting habitat is not present within the Study Area.	Low
<i>Haliaeetus leucocephalus</i>	Bald eagle	SE, CFP, BGEPA, FSS	Nests on large trees in the vicinity of large lakes, reservoirs and rivers. Wintering birds are most often found near large concentrations of waterfowl or fish.	Although not documented nesting within the Study Area, this species was observed foraging at the Reservoir during surveys conducted in 2015. A bald eagle has been observed overwintering at the Reservoir.	Present (non-nesting)
<i>Icteria virens</i>	Yellow-breasted chat	CSC	Inhabits riparian thickets of willow and other brushy tangles near water courses; nests in low, dense riparian vegetation; nests and forages within 10 feet of ground.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; limited breeding and foraging habitat occurs in the Study Area.	Moderate
<i>Lanius ludovicianus</i>	Loggerhead shrike	BCC, CSC	Broken woodland, savannah, pinyon-juniper woodland, Joshua tree woodland, riparian woodland, desert oases, scrub, and washes; prefers open country for hunting with perches for scanning and fairly dense shrubs and brush for nesting.	Although not documented within the Study Area an occurrence of this species is reported from the CNDDDB approximately 2.5 miles east of the Study Area. Suitable foraging and breeding habitat occurs within the Study Area.	High
<i>Numenius americanus</i>	Long-billed curlew	BCC, WL	Generally nest in short grasses including grass prairies or agricultural fields and move to denser grasslands after young have fledged. Winter at the coast and in Mexico.	There are no known recent records for this species in the Study Area; There are a variety of eBird records for this species approximately 20 miles to the north within the Lancaster Area. Suitable habitat occurs within portions of the Study Area.	Low
<i>Pandion haliaetus</i>	Osprey	WL	Forages and nests along rivers, lakes, and reservoirs.	There are no known recent records for this species in the Study Area; however, this generally coastal species is known from the San Gabriel Mountains. Suitable foraging habitat occurs within and adjacent to the Reservoir.	Low
<i>Piranga rubra</i>	Summer tanager	CSC	Breeds in mature, desert riparian habitats dominated by cottonwood and willow.	This species was documented during surveys within the Study Area in May and July 2012 although the breeding status of the individuals was not confirmed.	Present

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Poliptila californica californica</i>	Coastal California gnatcatcher	FT, CSC	Various sage scrub communities, often dominated by California sage and buckwheat; generally avoids nesting in areas with a slope of greater than 40%, and typically less than 820 feet in elevation.	There are no known records for this species in the Study Area or surrounding areas; the Study Area is located within the known geographic distribution for this species. Suitable habitat for this species does not occur within the Study Area.	Not likely to occur
<i>Pyrocephalus rubinus</i>	Vermilion flycatcher	CSC	Nests in desert riparian and landscaped cottonwoods and other trees in developed areas including golf courses; often near agricultural or grassland areas.	There are no known recent records for this species in the Study Area; There is a 2010 eBird record for this species approximately 7 miles to the northwest at Lake Palmdale. Suitable habitat occurs within portions of the Study Area.	Moderate
<i>Riparia riparia</i>	Bank swallow	ST	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert; requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, or the ocean to dig a nesting hole.	There are no known recent records for this species in the Study Area; There are numerous eBird records for this species approximately 20 miles to the northwest near the City of Lancaster. Suitable habitat occurs within portions of the Study Area.	Low
<i>Selasphorus sasin</i>	Allen's hummingbird	BCC, SA	Most commonly breeds in coastal scrub, valley-foothill hardwood, and valley-foothill riparian habitats; occurs in a variety of woodland and scrub habitat as a migrant.	There are no known recent records for this species in the Study Area. There are several eBird records for this species approximately 5 miles to the northwest and 10 miles to the east. Suitable habitat occurs throughout the Study Area.	Moderate
<i>Spinus lawrencei</i>	Lawrence's goldfinch	BCC, SA	Breeds in a variety of habitats throughout its range in southern California, including mixed conifer-oak forest, blue oak savannah, pinyon-juniper woodland, chaparral, riparian woodland, and desert oases.	This species was observed within the Reservoir and within the southern extent of the Study Area in 2012. Suitable habitat occurs within portions of the Study Area.	Present
<i>Strix occidentalis occidentalis</i>	California spotted owl	CSC, BCC, FSS	In Southern California occupies montane hardwood and montane hardwood/conifer forests with dense, multi-layered canopies.	There are no known records for this species in the Study Area or surrounding areas. Suitable habitat does not occur within the Study Area.	Not likely to occur
<i>Toxostoma bendirei</i>	Bendire's thrasher	CSC, BCC	Prefers desert habitats with tall vegetation comprised of cholla cactus, creosote bush and yucca. Also found in juniper woodland.	There are no known recent records for this species in the Study Area; the Study Area is located outside the known geographic range for this species. Limited suitable habitat is present within the Study Area.	Not likely to occur.
<i>Toxostoma lecontei</i>	Le Conte's thrasher	CSC, BCC	Sparse desert scrub such as creosote bush, Joshua tree, and saltbush scrubs, or sandy-soiled cholla-dominated vegetation. Nests in dense, spiny shrubs or densely branched cactus in desert wash habitat.	There are no known records for this species in the Study Area. The CNDDB reports occurrences of this species approximately 5 miles northeast of the Study Area. Suitable habitat occurs within portions of the Study Area.	Moderate

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE, SE	Summer resident of southern California in low riparian habitats in vicinity of water or dry river bottoms; found below 2000 ft; nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mesquite, mulefat.	This species was detected during surveys conducted below the dam in 2010, 2011, and 2012. Suitable habitat occurs within the northern extent of the Study Area.	Present
<i>Vireo vicinior</i>	Gray Vireo	FSS	Summer resident of southern California in desert and riparian areas. Known to nest in chaparral, scrub oak, and big sagebrush.	Known from Liebre Mountain and Mint Canyon (near Vasquez Rocks), Los Angeles County.	Moderate
MAMMALS					
<i>Antrozous pallidus</i>	Pallid bat	CSC, FSS	Desert, grassland, shrubland, woodland, forest; most common in open, dry habitats with rocky areas for roosting; very sensitive to disturbance of roosting sites.	This species was detected during surveys in the Study Area. Suitable habitat occurs throughout the Study Area.	Present
<i>Bassariscus astutus</i>	Ring-tailed cat	CFP	Occurs in chaparral, coastal sage scrub, riparian scrub, oak woodlands, and riparian woodlands in proximity to permanent water.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species and it is known to occur within sections of the San Gabriel Mountains. Suitable habitat is present within portions of the Study Area.	Moderate
<i>Chaetodipus fallax pallidus</i>	Pallid San Diego pocket mouse	CSC	Prefers to inhabit desert wash, desert scrub, desert succulent scrub and/or pinyon-juniper woodland.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Nearest CNDDDB for this record is approximately 7 miles to the southeast of the Study Area. Suitable habitat occurs within portions of the Study Area.	Low
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	SC, CSC, FSS	Coastal conifer and broadleaved forests, oak and conifer woodlands, arid grasslands and deserts, and high-elevation forests and meadows. Primarily roosts in caves and abandoned mines, but may roost in buildings, bridges, rock crevices, and hollow trees in many habitat types.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species. Roosting and foraging habitat occur within portions of the Study Area.	Moderate
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	FE, CSC	Generally found in alluvial scrub vegetation on sandy loam substrates found in alluvial fans and/or floodplains. Needs early to intermediate seral stage vegetation.	There are no known recent records for this species in the Study Area. The nearest CNDDDB record is approximately 10 miles northeast of the Study Area and this is likely a misidentification. Suitable habitat is not present within the Study Area.	Not likely to occur

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Euderma maculatum</i>	Spotted bat	CSC	Occupies a wide variety of habitats from arid deserts and grasslands, to mixed conifer forests; feeds over water and along washes; needs rock crevices in cliffs or caves for roosting.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; potential breeding and suitable foraging habitat occurs within portions of the Study Area.	Moderate
<i>Eumops perotis californicus</i>	Western mastiff bat	CSC	Many open, semi-arid to arid habitats, including coniferous and deciduous woodland, coastal scrub, grassland, chaparral; roosts in crevices in cliff faces, high buildings, trees, tunnels.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; potential breeding and suitable foraging habitat occurs within portions of the Study Area.	Moderate
<i>Lasiurus blossevillei</i>	Western red bat	CSC	Primarily roosts in mature riparian forest but also found in upland forests, woodlands, and orchards	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; potential breeding and suitable foraging habitat occurs within portions of the Study Area.	Moderate
<i>Lasiurus cinereus</i>	Hoary bat	SA	Prefers deciduous and coniferous woodlands; primarily roosts in tree foliage.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; potential breeding and suitable foraging habitat occurs within portions of the Study Area.	High
<i>Macrotus californicus</i>	California leaf-nosed bat	CSC	Prefers caves, mines and rock shelters in Sonoran desert scrub.	There are no known recent records for this species in the Study Area; the Study Area is located outside the known geographic range for this species; potential breeding and suitable foraging habitat occurs within portions of the Study Area.	Low
<i>Myotis ciliolabrum</i>	Western small-footed myotis	SA	Occurs in a wide variety of arid upland habitats at elevations ranging from sea level to 2,700 meters (8,860 feet); day roosts include rock crevices, caves, tunnels and mines, and, sometimes, buildings and abandoned swallow nests.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; potential breeding and suitable foraging habitat occurs within portions of the Study Area.	High
<i>Myotis thysanodes</i>	Fringed myotis	SA, FSS	Occurs in a wide variety of habitats. Optimal habitats include pinyon-juniper, valley foothill hardwood and hardwood-conifer woodlands. Forms maternity colonies and roosts in caves, mines, buildings and crevices.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; potential breeding and suitable foraging habitat occurs within portions of the Study Area.	High
<i>Myotis volans</i>	Long-legged myotis	SA	Generally found along forest edges with good sun exposure. Breeds in tree cavities, under loose bark, rock crevices, cliffs and buildings. Forage over ponds, streams and forest clearings.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; potential breeding and suitable foraging habitat occurs within portions of the Study Area.	High

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Myotis yumanensis</i>	Yuma myotis	SA	Inhabits open forests and woodlands with sources of water. Species is closely tied to bodies of water, over which it feeds. Forms maternity colonies in caves, mines, buildings, or crevices.	This species was detected within the Study Area during surveys conducted in 2012. Suitable foraging and breeding habitat occurs within portions of the Study Area.	Present
<i>Neotamias speciosus speciosus</i>	Lodgepole chipmunk	SA	Occurs in isolated populations in the Southern California mountains in open-canopy forests and mixed-conifer from 6000–10,350 feet in elevation	There are no known recent records for this species in the Study Area; the Study Area is located outside the known geographic range for this species and is well below the preferred elevation of this species. The CNDDDB reports a historic occurrence of this species approximately 10 miles southeast of the Study Area.	Not likely to occur
<i>Onychomys torridus ramona</i>	Southern grasshopper mouse	CSC	Occurs primarily in grassland and sparse coastal sage scrub habitats.	There are no known recent records for this species in the Study Area; the Study Area is located within the known geographic range for this species; Suitable habitat occurs within limited portions of the Study Area.	Moderate
<i>Ovis canadensis nelsoni</i>	Nelson's (San Gabriel Mountains) bighorn sheep	SA, FSS	Inhabits open, rocky, steep areas with access to water and herbaceous vegetation. Populations currently managed in the Sheep management area of the San Gabriel Mountains.	This species has been observed upstream of the Reservoir near Santiago Creek in 2005. The Study Area is located within the known geographic distribution for this species; suitable habitat occurs within portions of the Study Area.	Present
<i>Perognathus alticollis alticollis</i>	White-eared pocket mouse	CSC, FSS	Known only from a series of allopatric populations in arid yellow pine communities in the vicinity of Little Bear Valley and Strawberry Peak, San Bernardino Mountains, San Bernardino County. This species is likely to be found among Sagebrush and other shrubs in open, Ponderosa Pine forests and Pinyon-Juniper woodlands and in Sagebrush covered areas on the northern slopes and Big Bear Basin of the San Bernardino Mountains.	There are no known recent records for this species in the Study Area; the Study Area is located outside the known geographic range for this species.	Low
<i>Perognathus alticollis inexpectatus</i>	Tehachapi pocket mouse	CSC, FSS	Occurs in a diversity of habitats including, Joshua tree woodland, pinyon-juniper woodland, oak savanna, and native and non-native grasslands. Burrows in friable, sandy soil.	There are no known recent records for this species in the Study Area; the Study Area is located outside the known geographic range for this species. This species is, however, known to occur on the east slopes of the San Gabriel Mountains. Suitable habitat is present within the Study Area.	Not likely to occur

Table C.3-5. Known and Potential Occurrence of Special-Status Wildlife within the Study Area

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Perognathus longimembris brevinasus</i>	Los Angeles pocket mouse	CSC	Found in open ground of fine sandy composition; prefers fine, sandy soils and may utilize these soil types for burrowing; may be restricted to lower elevation grassland and coastal sage scrub.	There are no known recent records for this species in the Study Area; the Study Area is located outside the known geographic range for this species.	Not likely to occur
<i>Taxidea taxus</i>	American badger	CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils; require sufficient food source, friable soils, and open, uncultivated ground; prey on burrowing rodents.	There are no known records for this species in the Study Area; the Study Area is located within the known geographic distribution for this species; suitable habitat occurs within portions of the Study Area.	Moderate
<i>Xerospermophilus mohavensis</i>	Mohave ground squirrel	ST	Occurs in the Mojave Desert in desert scrub and Joshua tree woodlands with winterfat (<i>Krascheninnikovia lanata</i>) and spiny hopsage (<i>Grayia spinosa</i>).	This species is not expected to occur at the Reservoir. A 2015 survey determined that the sediment disposal sites do not contain suitable habitat for this species (Phoenix, 2015).	Not likely to occur

Federal Rankings:

FE = Federally Endangered
FT = Federally Threatened
FP = Federal Proposed for Listing
FC = Federal Candidate for Listing
BCC = USFWS Bird of Conservation Concern
FSS = Forest Sensitive Species (ANF; USFS, 2014)
BGEPA = Bald and Golden Eagle Protection Act

State Rankings:

SE = State Endangered
ST = State Threatened
SC = State Candidate for Listing
CFP = California Fully Protected
CPF = California Protected Fur-bearer
SA = CDFW Special Animal
WL = CDFW Watch List
CSC = California Species of Special Concern

* Although these species have the some potential to occur or are present within the Study Area, they are likely to be limited to occasional or sporadic use of the Project area.

** The occurrence potential for these species is limited to the proposed haul routes only and the 47th Street East sediment disposal site. Suitable habitat for the indicated species is not present within Reservoir.

C.3.1.10 Designated Critical Habitat

Designated Critical Habitat for the arroyo toad, Unit 21 (50 CFR Part 17), is present immediately south of the proposed grade control structure at Rocky Point (USFWS, 2011). Refer to Figure C.3-6 for a graphical depiction of critical habitat within the Study Area.

C.3.1.11 Jurisdictional Waters and Wetlands

The Antelope Valley Watershed, which contains the majority of the Project, is a large (3,387-square-mile) closed basin in the western Mojave Desert. All water that enters the watershed either infiltrates into the underlying groundwater basin, or flows toward three playa lakes located near the center of the watershed. These playa lakes are located on Edwards Air Force Base and include Rosamond Lake, Rogers Dry Lake, and Buckhorn Dry Lake. Rosamond and Rogers Dry Lakes are used by Edwards Air Force Base for flight test activities, research operations, and emergency landings.

Little Rock Creek is a major intermittent drainage that transports water from the San Gabriel Mountains to the playas described above. During periods of normal rainfall, the creek readily overtops the dam and flows for several miles into the Antelope Valley. Riparian vegetation is present at the Reservoir and along Little Rock Creek below the dam. The proposed 47th Street East sediment disposal site is located in the lower foothills of the San Gabriel Mountains immediately below the California Aqueduct. This site is bisected by a series of ephemeral drainages that carry surface water off the site. As a result of the dry climate in the Project area, the existing ephemeral streams typically flow only during periods of heavy rainfall.

A preliminary jurisdictional delineation of State and or federal waters/wetlands was conducted at the Reservoir, at Little Rock Creek below the dam, and at 47th Street East sediment disposal site (see Figures C.3-12a, C.3-12b). Based on this survey the preliminary jurisdictional determination and delineation of waters report identified 92.306 Federal non-wetland waters and 97.428 acres of State jurisdictional waters (see Table C.3-6). Federal wetland waters do not occur in the Reservoir or in Little Rock Creek. Littlerock Reservoir, Little Rock Creek, and the ephemeral drainages on the 47th Street East sediment disposal site would be considered “waters of the United States” and would be subject to the jurisdiction of the USACE, the CDFW, and the RWQCB.

Table C.3-6. Jurisdictional Waters in the Project area			
Location	Corps/LRWQCB Waters and Wetlands (Acres)		
	Non-wetland Waters of U.S.	Wetlands	CDFW Jurisdictional Waters (acres)
Reservoir	91.9	0.0	96.4
District Access Road	0.006	0.0	0.028
47th Street East Sediment Disposal Area	0.4	0.0	1.0
Total	92.306	0.0	97.428

C.3.1.12 Wildlife Corridors and Linkages

The ability for wildlife to move freely among populations is important to long-term genetic variation and demography. Fragmentation and isolation of natural habitat may cause loss of native species diversity in fragmented habitats. In the short term, wildlife movement may also be important to individual animals’ ability to occupy home ranges, if a species range extends across a potential movement barrier. These

considerations are especially important for rare, threatened, or endangered species, and wide-ranging species such as large mammals, which exist in low population densities.

The Reservoir is located within the boundaries of the ANF, traversing an area dominated by steep, mountainous ridgelines and deep valleys. From a wildlife movement perspective, the ANF can be considered a large block of continuous open space surrounded by transitional ecotones, including the arid desert regions to the north and the highly developed San Gabriel Valley and Los Angeles Basin to the south. As a result, the ANF provides expansive habitat for wildlife movement and represents a broad, regional linkage between the San Bernardino Mountains to the east and the Santa Susana and Sierra Madre Mountains to the west. The proposed sediment disposal areas are located in the urban interface but may still provide passage or resting areas for some species.

The California Essential Habitat Connectivity Project was commissioned by the California Department of Transportation (Caltrans) and CDFW to create a statewide assessment of essential habitat connectivity to be used for conservation and infrastructure planning (Spencer et al., 2010). One of its goals was to create the Essential Connectivity Map, which depicts large, relatively natural habitat blocks that support native biodiversity (natural landscape blocks) and areas essential for ecological connectivity between them (essential connectivity areas).

The Essential Connectivity Map (*ibid*) identifies the San Gabriel Mountains as a natural landscape block with essential connectivity areas in some of the more developed areas. This map does not provide a fine enough scale to identify the Project site, but it is either within or adjacent to a natural landscape block.

The Project area is adjacent to Los Angeles County's proposed Antelope Valley Significant Ecological Area (SEA) and portions of the haul route are within the SEA. The SEA designation is given to land that supports irreplaceable biological resources, and SEAs are mapped as a zoning overlay in the Los Angeles County General Plan (LADRP, 2014). Development within the SEAs is regulated by Los Angeles County Ordinance (Hillside Management and Significant Ecological Areas Ordinance) intended to preserve the biological resources and sustainability of the SEAs (LADRP, 2014).

The Antelope Valley SEA extends from the ANF to the playa lakes within Edwards Air Force Base, encompassing most of the two largest drainages (Little Rock Creek and Big Rock Creek) exiting the northern slope of the San Gabriel Mountain range. The Little Rock Creek segment of the SEA extends from the Littlerock Dam north along the Little Rock Creek Wash and floodplain (LADRP, 2014). The SEA serves as a major habitat linkage and movement corridor for plant and wildlife species. The Little Rock Creek (and Santiago Creek) riparian corridor, and its associated uplands, is recognized as a vital pathway for wildlife moving from the higher elevations of the surrounding ANF to desired lower elevation habitats. Several migratory songbirds utilize the riparian vegetation within the corridor for breeding, nesting, and foraging, or at a minimum, as transient rest sites during migration. Additionally, large, wide-ranging animals, such as black bear, mountain lion, and coyote have been documented at the Reservoir in search of prey opportunities, water, and cover. In the Project area the Dam acts as a seasonal barrier for some species.

C.3.2 Regulatory Framework

The following are federal, state, and local laws, ordinances, regulations, and standards that apply to biological resources and jurisdictional waters and wetlands. See Section C.9 (Recreation and Land Use) for an evaluation of policies within the Forest Service Land Management Plan that are applicable to biological resources.

C.3.2.1 Federal

- **Endangered Species Act of 1973.** The Endangered Species Act (ESA) (16 USC 1531 et seq.) and subsequent amendments establish legal requirements for the conservation of endangered and threatened species and the ecosystems upon which they depend. The ESA also requires the USFWS to designate critical habitat for listed threatened and endangered species. The effects analyses for designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species for which it was designated. ESA provisions protect federally listed threatened and endangered species and their habitats from unlawful take and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.
- **Clean Water Act.** The Clean Water Act (33 USC 1251 et seq.) establishes legal requirements for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters.
 - **Section 404.** Section 404 establishes a permit program administered by the U.S. Army Corps of Engineers (USACE) regulating the discharge of dredged or fill material into waters of the United States, including wetlands. Implementing regulations by the USACE are found at 33 CFR Parts 320-330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines and were developed by the EPA in conjunction with the USACE (40 CFR Parts 230). The Guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts. A 404(b)(1) Evaluation Summary is included in Appendix F of this EIS/EIR.
 - **Section 401.** Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the United States must obtain a State certification that the discharge complies with other provisions of the Clean Water Act. The Regional Water Quality Control Boards administer the certification program in California.
- **Migratory Bird Treaty Act.** The Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or “take” any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. “Take” is defined as possession or destruction of migratory birds, their nests, or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the Migratory Bird Treaty Act. The Federal Migratory Bird Treaty Act (MBTA) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs. Executive Order 13186 (January 10, 2001) identifies the responsibilities of federal agencies to protect migratory birds, and directs executive departments and agencies to take certain actions to further implement the MBTA. The Order requires each agency that undertakes actions that could affect migratory birds to enter into a Memorandum of Understanding (MOU) with the USFWS to promote the conservation of migratory bird populations. The Forest Service entered into the required MOU with the USFWS on December 8, 2008 (FS Agreement #08-MU-1113-2400-264). The MOU identifies specific activities to be undertaken by the Forest Service and USFWS to promote bird conservation.
- **Bald and Golden Eagle Protection Act.** The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering

behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (72 FR 31132; 50 CFR 22.3).

- The USFWS is the primary federal authority charged with the management of bald and golden eagles in the United States. USFWS guidance on the applicability of current Eagle Act statutes and mitigation is currently under review. On November 10, 2009 the USFWS implemented new rules (74 FR 46835) governing the “take” of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act.
- **Noxious Weed Act of 1974, as amended.** This act provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health. Under this act, the Secretary of Agriculture was given the authority to designate plants as noxious weeds, and inspect, seize, and destroy products, and to quarantine areas, if necessary to prevent the spread of such weeds.

C.3.2.2 State

- **California Endangered Species Act.** Provisions of California Endangered Species Act protect State-listed Threatened and Endangered species. The CDFW regulates activities that may result in “take” of individuals (“take” means “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as “fully protected” (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.
- In addition to federal and State-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection.
- Birds of prey are protected in California under the State Fish and Game Code. Section 3503.5 states it is “unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFG. Under Sections 3503 and 3503.5 of the State Fish and Game Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the Migratory Bird Treaty Act, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the Migratory Bird Treaty Act, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800 are prohibited.
- **California Code of Regulations (Title 14, sections 670.2 and 670.5).** Identifies the plants and animals of California that are declared rare, threatened, or endangered.
- **Protected furbearing mammals (California Code of Regulations, Title 14, section 460).** Fisher, marten, river otter, desert kit fox, and red fox may not be taken at any time.

- **Native Plant Protection Act (Fish & Game Code 1900-1913).** California's Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFG at least 10 days in advance of any change in land use. This allows CDFG to salvage listed plant species that would otherwise be destroyed. The Applicant is required to conduct botanical inventories and consult with CDFG during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.
- **Section 3503 & 3503.5 of the Fish and Game Code.** Under these sections of the Fish and Game Code, the Applicant is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory non-game bird as designated in the Migratory Bird Treaty Act, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the Migratory Bird Treaty Act, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800.
- **Porter-Cologne Water Quality Control Act.** Regional water quality control boards regulate the "discharge of waste" to "waters of the State." All projects proposing to discharge waste that could affect waters of the State must file a waste discharge report with the appropriate regional board. The board responds to the report by issuing waste discharge requirements (WDR) or by waiving WDRs for that project discharge. Both of the terms "discharge of waste" and "waters of the State" are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other "discharge." Isolated wetlands within California, which are no longer considered "waters of the United States" as defined by Section 404 of the CWA, are addressed under the Porter-Cologne Act.
- **State-Regulated Habitats.** The State Water Resources Control Board is the State agency (together with the Regional Water Quality Control Boards [RWQCB]) charged with implementing water quality certification in California. The Project falls under the jurisdiction of the Los Angeles (Region 4) RWQCB.
- The CDFW extends the definition of stream to include "intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife" (CDFG, 1994).
- Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed may require that the Project applicant enter into a Streambed Alteration Agreement with the CDFW.
- **Fully Protected Designations – California Fish and Game Code Sections 3511, 4700, 5515, and 5050.** Prior to enactment of CESA and the federal ESA, California enacted laws to "fully protect" designated wildlife species from take, including hunting, harvesting, and other activities. Unlike the subsequent CESA and ESA, there was no provision for authorized take of designated fully protected species. Currently, 36 fish and wildlife species are designated as fully protected in California, including golden eagle.
- California Senate Bill 618 (signed by Governor Brown in October 2011) authorizes take of fully protected species, where pursuant to an NCCP, approved by CDFW. The legislation gives fully protected species the same level of protection as is provided under the Natural Community Conservation Planning Act for endangered and threatened species (see below).
- **Native Birds – California Fish and Game Code Sections 3503 and 3513.** California Fish and Game Code Section 3503 prohibits take, possession, or needless destruction of bird nests or eggs except as otherwise provided by the Code; Section 3503.5 prohibits take or possession of birds of prey or their eggs except as otherwise provided by the Code; and Section 3513 provides for the adoption of the

MBTA's provisions (above). With the exception of a few non-native birds such as European starling, the take of any birds or loss of active bird nests or young is regulated by these statutes. Most of these species have no other special conservation status as defined above. The administering agency for these sections is the CDFW. As with the MBTA, these statutes offer no statutory or regulatory mechanism for obtaining an incidental take permit for the loss of non-game migratory birds.

- **Streambed Alteration Agreements – California Fish and Game Code Sections 1600-1616.** Under these sections of the Fish and Game Code, an applicant is required to notify CDFW prior to constructing a project that would divert, obstruct, or change the natural flow, bed, channel, or bank of a river, stream, or lake. Preliminary notification and project review generally occur during the environmental review process. When a fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the Project. CDFW jurisdiction is determined to occur within the water body of any natural river, stream, or lake. The term “stream,” which includes creeks and rivers, is defined in Title 14, CCR, Section 1.72.

C.3.2.3 Local

■ Los Angeles County Ordinances

- **Hillside Management and Significant Ecological Areas Ordinance.** This ordinance regulates development within Significant Ecological Areas (SEAs) to preserve biological resources and sustainability. The SEA designation is given to land that supports irreplaceable biological resources, and SEAs are mapped as a zoning overlay in the Los Angeles County General Plan.
- **Los Angeles County Oak Ordinance.** This ordinance requires permitting and mitigation for the removal of oak trees.

- **City of Palmdale General Plan (January 1993).** The General Plan sets forth goals to preserve and protect biological resources, including: (1) preserve significant natural and man-made open space areas; (2) protect significant ecological resources and ecosystems, including, but not limited to, sensitive flora and fauna habitat areas; (3) preserve designated natural hillsides and ridgelines in the Planning Area, to maintain the aesthetic character of the Antelope Valley; (4) protect the quality and quantity of local water resources; and (5) promote the attainment of state and federal air quality standards.

- Biological resources are addressed in the City's General Plan Goal ER2, which calls for protecting “...significant ecological resources and ecosystems, including, but not limited to, sensitive flora and fauna habitat areas.” Significant Ecological Areas are identified at Big Rock Wash, Little Rock Wash, Ritter Ridge, Portal Ridge, and Alpine Butte. Biological surveys are required for any new development in these areas, and significant environmental resources are required to be considered and preserved to the extent feasible. The plan also calls for the preservation of natural drainage courses and riparian areas containing significant concentrations of ecological resources, as well as significant Joshua tree woodlands.

- The City would require biological assessments and reports for projects in known or suspected natural habitat areas prior to Project approval. These reports would be used to establish significant natural habitat areas and ecologically sensitive zones to prevent disturbance and degradation of these areas. Recommended mitigation measures as identified in the reports would be required to be implemented as development occurs.

- **City of Palmdale Native Desert Vegetation Ordinance.** The City has adopted Ordinance No. 952, referred to as the Native Desert Vegetation Ordinance. This ordinance is designed to preserve a number

of specimen-quality juniper and Joshua trees that add to community identity, and to encourage the use of native vegetation in new development landscaping. All landscaping for new developments must conform to the requirements set forth in the Native Desert Vegetation Ordinance.

- **Antelope Valley Area Plan.** This plan requires minimizing disruption and degradation of the environment, integrating land uses with natural environmental systems, instituting measures to mitigate the impacts of environmental hazards, and prohibiting expansion of urban uses into areas of rare and endangered species. It promotes the designation of significant plant and wildlife habitats as Significant Ecological Areas (SEAs) and preservation of biotic diversity in the valley by designating rare and unique plant and animal SEAs and the measures for their protection. This plan promotes the establishment of an open space network.

C.3.3 Issues Identified During Scoping

Table C.3-7 below provides a list of biological resource issues raised during the public scoping period for the EIS/EIR (see Appendix E, Summary of Scoping Process). Issues are listed by agency or members of the public providing comment. The table also includes a brief discussion the applicability of each issue to the environmental analysis and where that issue is addressed in the EIS/EIR.

Table C.3-7. Scoping Issues Relevant to Biological Resources	
Comment	Consideration in the EIS/EIR
Lahontan Regional Water Quality Control Board	
The Draft EIS/EIR should identify an alternative and define mitigation measures to ensure that the concentrations of Hg and PCBs in fish tissue are not increased by the Project and are decreased to the extent feasible.	<p>The EIS/EIR includes a reasonable range of alternatives including allowing the Reservoir to fill with sediment. The presence of Hg and PCBs in fish tissue is considered part of the baseline condition. Standard Project Commitments have been incorporated into the Project that require sediment testing for these and other constituents.</p> <p>Fish tissue and sediment samples were collected to analyze Hg and PCB content. The source of these contaminants is currently unknown. The potential effect of each alternative on levels of Hg and PCBs in surface waters, sediments, and fish tissue is analyzed in Section C.12.5.</p>
The Draft EIS/EIR should evaluate changes to management of fish species as a tool in addressing mercury impairments. Which species are present and how they are managed is an important factor in determining the severity of the problem in a given reservoir. Stocking reservoirs with less predatory fish might limit methylmercury bioaccumulation.	<p>Reservoir management alternatives (such as pH adjustment, nutrient addition, oxygenation, and stocking practices) to reduce methylmercury production are not part of the proposed action. Measures are included as part of the proposed action to ensure that contaminated sediments would not be mobilized or otherwise allowed to enter the aquatic ecosystem.</p> <p>Due to the presence of arroyo toads in Little Rock Creek the CDFW no longer stocks recreational fish in the Reservoir. Native fish were not detected during the surveys. Bluegill and largemouth bass were the most common non-native species detected in the Reservoir and portions of Little Rock Creek above Rocky Point. Green sunfish, pumpkinseed sunfish, common carp, channel catfish, and bullhead are also expected to occur. Rainbow trout and brown trout have been recorded above the Reservoir and in some areas have been removed by the CDFW. Non-native fish would be removed from the Reservoir as part of the proposed action.</p>

Table C.3-7. Scoping Issues Relevant to Biological Resources	
Comment	Consideration in the EIS/EIR
Recommend researching existing thresholds for mercury in prey fish and evaluating the potential risk to wildlife that may exist. Utilize the recent data on collected tissue of sport fish to assess potential impacts on wildlife that consume small fish from the reservoir. Include the results of this analysis in the EIS/EIR.	Non-native fish would be removed as part of the proposed action (see Sections B.2.3.2 and C.3.1.5), which would avoid exposure of bird species to elevated levels of contaminants.
Department of Fish and Wildlife	
The Draft EIS/EIR should: (1) Focus on adverse Project impacts to Least Bell's Vireo and identify avoidance measures; and (2) Identify sediment disposal locations and evaluate their impacts to biological resource. Any sediment disposal sites should be carefully evaluated for the presence of wetland habitat (e.g., existing depressions or mining pits).	The EIS/EIR provides an evaluation of impacts to least Bell's vireo and other threatened, endangered, proposed, candidate, sensitive species habitats and wetlands. Standard Project Commitments have been incorporated into the Project to reduce impacts to these species or their habitats. The EIS/EIR provides a thorough analysis of the proposed sediment disposal sites and includes an evaluation of jurisdictional waters at those locations.
Per CEQA Guidelines, §15125(c), information on the regional setting that is critical to an assessment of environmental impacts should place special emphasis on resources that are rare or unique to the region.	The EIS/EIR provides a thorough description of the baseline setting.
The analysis should include a thorough, recent floristic-based assessment of special status plants and natural communities, following the Department of Fish and Wildlife's (DFW) Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (http://www.dfg.ca.gov/habcon/plant/). Conduct floristic, alliance- and/or association-based mapping and vegetation impact assessments within the Project area with use of the Manual of California Vegetation (2nd ed., 2008). Include adjoining habitat areas in this assessment where site activities could lead to direct or indirect impacts off site.	In conformance with CDFG (2009), surveys were (a) floristic in nature, (b) consistent with conservation ethics, (c) systematically covered all habitat types on the sites, and (d) are well documented, by this report and by voucher specimens to be deposited at Rancho Santa Ana Botanic Garden. Vegetation descriptions included the Project area and a 500-foot buffer. Vegetation names are based on Sawyer et al. (2009) and have been defined at least to the alliance level and in some cases to the association level.
Inventory rare, threatened and endangered, and other sensitive species on site and within the area of potential effect, as defined by CEQA Guidelines § 15380. Address seasonal variations in use of the Project area. Develop species-specific survey procedures in consultation with U.S. Fish and Wildlife Service.	Field surveys were conducted between 2007 and 2014 and included a wide range of focused and protocol surveys. Please see Section C.3.1.1 for a description of survey methods.
Analysis should include a 9-quad search around the Project vicinity to identify potential sensitive species. Include a current inventory of the biological resources associated with each habitat type on site and within the area of potential effect. Contact the California Natural Diversity Data Base (www.wildlife.ca.gov/biogeodata/) to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.	The literature review included a nine quad search in addition to extensive review of existing regulatory plans, technical studies and consultation with local experts.
The DFW strongly discourages disturbance to wetlands or conversion of wetlands to uplands. All wetlands and water-courses, whether intermittent episodic or perennial, should be retained and provided with substantial setbacks that preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations.	A preliminary jurisdictional delineation of State and or federal waters/wetlands was conducted at the Reservoir, at Little Rock Creek below the dam, and at 47th Street East sediment disposal site Based on this survey the preliminary jurisdictional determination and delineation of waters report identified 92.306 Federal non-wetland waters and 97.428 acres of State jurisdictional waters. Federal wetland waters do not occur in the Reservoir or in Little Rock Creek.

Table C.3-7. Scoping Issues Relevant to Biological Resources

Comment	Consideration in the EIS/EIR
The DFW has regulatory authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed. Project applicants must provide written notification to the DFW pursuant to the Fish and Game Code (§1600 et seq.) and may need to obtain a Lake and Streambed Alteration Agreement (LSA). In order to issue a LSA, the DFW would require the EIS/EIR to include a full discussion of the Project's potential impacts to the stream or riparian resources and the incorporation of adequate avoidance, mitigation, monitoring and reporting commitments.	Littlerock Reservoir, Little Rock Creek, and the ephemeral drainages on the 47th Street East sediment disposal site would be considered "waters of the United States" and would be subject to the jurisdiction of the USACE, the CDFW, and the RWQCB. As required by law PWD would comply with all regulatory requirements.
The DFW considers adverse impacts to a CESA-listed species to be significant without mitigation. The DFW recommends that the Applicant seek appropriate take authorization under CESA prior to Project implementation (e.g., Incidental Take Permit, Consistency Determination). Early consultation is encouraged, as significant modification to a project and its mitigation measures may be required in order to obtain a CESA Permit. The DFW may need to prepare a separate CEQA document for the issuance of an Incidental Take Permit unless the Project addresses all impacts to CESA-listed species and specifies a mitigation monitoring and reporting program in sufficient detail.	The EIS/EIR provides an analysis of impacts to State and federally listed species. Standard Project Commitments have been incorporated into the Project to avoid or reduce impacts to listed species. In addition, PWD would be seeking take coverage through Section 2081 for potential impacts to State listed species.
Include a discussion of potential adverse impacts to biological resources from sediment-removal activities, staging areas, lighting, noise, human activity, exotic species, and drainage, as well as proposed mitigation measures.	The EIS/EIR provides an analysis of impacts from sediment-removal activities, staging areas, lighting, noise, human activity, exotic species, and to drainages. Standard Project Commitments have been incorporated into the Project to avoid or reduce impacts from the Project.
Evaluate indirect Project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands. Evaluate impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas.	The EIS/EIR provides an analysis of impacts on impacts on biological resources, including wildlife corridor/movement areas, resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands. Standard Project Commitments have been incorporated into the Project to avoid or reduce impacts from the Project.
Develop a cumulative effects analysis for biological resources as described under CEQA Guidelines, §15130.	The EIS/EIR provides an analysis of cumulative effects impacts on biological resources.
The EIS/EIR should include measures to fully avoid and otherwise protect Rare Natural Communities from Project-related impacts. The DFW considers these communities as threatened habitats having regional and local significance.	Standard Project Commitments have been incorporated into the Project to avoid or reduce impacts from the Project.
The EIS/EIR should include mitigation measures for adverse impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.	Standard Project Commitments have been incorporated into the Project to avoid or reduce impacts from the Project. Where required, PWD would acquire off-site compensation lands that would be preserved in perpetuity.

Table C.3-7. Scoping Issues Relevant to Biological Resources	
Comment	Consideration in the EIS/EIR
The EIS/EIR should include measures to perpetually protect the targeted habitat values from direct and indirect negative impacts. Issues that should be addressed include, but are not limited to, restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, and increased human intrusion.	The EIS/EIR proposed Standard Project Commitments that reduce or avoid impacts from the Project.
The DFW recommends that measures be taken to avoid impacts to nesting birds during the implementation of the Project. Proposed activities (e.g., staging and disturbances to native and nonnative vegetation, structures, and substrates) should occur outside of the avian breeding season which generally runs from February 1 to September 1 (as early as January 1 for some raptors) to avoid take of birds or their eggs. If avoidance of the avian breeding season is not feasible, the DFW recommends surveys by a qualified biologist (i.e., experience in conducting breeding bird surveys) to detect protected native birds occurring in suitable nesting habitat that is to be disturbed and (as access to adjacent areas allows) any other such habitat within 300 feet of the disturbance area (within 500 feet for raptors). Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.	To reduce impacts to nesting birds, PWD would implement Standard Project Commitments that require the protection of nesting birds through worker education, pre-construction surveys for nesting birds, avoidance of active nest sites, construction monitoring, and the control of fugitive dust.
Habitat Restoration Plans should be prepared by persons with expertise in southern California ecosystems and native plan revegetation techniques and should include: (a) location of mitigation sites; (b) plant species to be used, container sizes, and seeding rates; (c) schematic depicting the mitigation area; (d) planting schedule; (e) description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.	Habitat restoration plans would be prepared by a qualified botanist with experience restoring arid ecosystems.

C.3.4 Environmental Consequences

Significance Criteria. The following significance criteria are based on the CEQA environmental checklist presented in Appendix G of the CEQA Statutes and Guidelines and are used to describe the potential impacts of the Project and alternatives on the sensitive biological resources that may occur in the Project area. All direct, indirect, short-term, and long-term impacts associated with the Project and project alternatives are assessed within this section. The Project would have a significant adverse environmental impact on biological resources if it would:

- **Criterion BIO1:** Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW, Forest Service, or USFWS.
- **Criterion BIO2:** Have an adverse effect, either directly or through habitat modifications, on any species listed as fully protected, endangered, threatened, or proposed or critical habitat for these species.

- Criterion BIO3: Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW, Forest Service, or USFWS
- Criterion BIO4: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Criterion BIO5: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Criterion BIO6: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances.
- Criterion BIO7: Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP.

Impact Assessment Methodology. Impacts to biological resources were assessed through consideration of Project effects on the landscape, habitat, community, and species level for the Project and alternatives. Impacts refer to initial excavation and sediment removal activities, construction of the grade control structure; annual and semi-annual sediment removal activities that would be conducted as part of operation; periodic road repairs below the Reservoir to maintain access to Project facilities; and the effects of water delivery on biological resources at the Reservoir and in downstream locations.

C.3.4.1 Description of Direct, Indirect, and Operational Impacts

Direct impacts are defined under CEQA as those that result from a project and occur at the same time and place. For biological resources in the Project area, direct impacts include the removal of vegetation or habitat; disturbance to wildlife from construction of the grade control structure, sediment removal activities, and road repairs below Littlerock Dam; crushing of burrows or animals in soft sediment; and mortality from road kill. Indirect impacts are caused by a project, but can occur later in time or are farther removed in distance but are reasonably foreseeable and related to the Project. Indirect impacts can include the disruption of native seed banks, spread of invasive plant species, changes to soil or hydrology that adversely affects native species over time, disruption of prey base, or increased predation through alterations of the physical landscape from project features. Indirect impacts may also include increased traffic and human disturbance from annual sediment removal activities and alterations to water surface elevations that result from water deliveries.

C.3.4.2 Permanent and Temporary Impacts

Permanent impacts include the conversion of land to a new use, such as the construction of the grade control structure or the placement of fill on natural lands. Temporary impacts are considered activities that are of short duration (i.e., 6 to 12 months) and that do not result in a permanent land use conversion.

C.3.4.3 Impacts to Biological Resources from Construction, Sediment Removal, and Road Repair Activities

The following discussion provides a summary of the types of impacts to biological resources that could occur due to construction of the grade control structure, sediment removal, and road repair activities within the Reservoir.

Direct impacts to vegetation from general excavation and sediment removal would involve clearing vegetation and disrupting native seed banks. Indirect effects include fugitive dust and the spread of non-native and invasive weeds (especially to adjacent habitats off site or in upstream riparian areas). Excessive dust can reduce photosynthetic capacity in plants over time and inhibit reproduction by physically coating reproductive structures or excluding insect pollinators.

Direct impacts to wildlife could occur from excavation activities as a result of mechanical crushing, road kill, loss of breeding sites, disturbance from human activity and vehicles, and trampling. Disturbances to wildlife would be associated with the removal of vegetation, excavation of the grade control structure, and changes to existing topographical and hydrological conditions. Indirect impacts to wildlife could include noise and vibration from earthmoving, fugitive dust, the degradation of water quality, changes in water runoff due to alterations in topography, increased erosion and sediment transport, and the spread of noxious weeds. Increased lighting during low-light periods (i.e., when pouring soil cement for the grade control structure) and noise can cause some species to leave the area and may disrupt foraging, breeding, or other activities. Many insects are drawn to light, and species that prey on insects, such as bats, may be attracted to lighted areas which would increase the potential for disturbance or mortality. General direct impacts to wildlife are summarized in Table C.3-8.

Table C.3-8. Direct Impacts to Wildlife from Construction, Sediment Removal, and Road Repair Activities	
Activity	Impacts
MAMMALS	
Earth moving, grading, habitat/vegetation removal	<ul style="list-style-type: none"> ▪ Direct mortality to small or less mobile species ▪ Crushing of burrows or fossorial animals, disruption of soil surfaces, compaction of soils, and displacement of native species ▪ Reduced use of area as a foraging or movement corridor ▪ Fugitive dust and habitat loss ▪ Creation of barriers disrupting movement
Noise and vibration	<ul style="list-style-type: none"> ▪ Interference with breeding or foraging activities and movement patterns ▪ Avoidance of areas adjacent to the excavation zone ▪ Interference with hearing resulting in increased predation ▪ Abandonment of burrows or habitat
Man-made sources of light	<ul style="list-style-type: none"> ▪ Disturbance or mortality to species that prey on insects attracted to light sources ▪ Collisions with vehicles at night
Placement and use of temporary access roads	<ul style="list-style-type: none"> ▪ Crushing of burrows, disruption of soil surfaces, compaction of soils, and displacement of native species ▪ Establishment of ruts or depressions that can alter soil conditions and hydrology ▪ Alteration of physical characteristics of soil underneath roads (placement of roads increases compaction up to 200 times relative to undisturbed sites) ▪ Effect on animal behavior by altering home range use, affect movement patterns, reduce reproductive success, alter escape response, and increase physiological stress
Traffic	<ul style="list-style-type: none"> ▪ Accidental mortality of small diurnal animals from vehicle collision ▪ Secondary vehicular mortality of opportunistic predators feeding on road kill
Waste	<ul style="list-style-type: none"> ▪ Ingestion of trash or leaked/spilled fluids such as ethylene glycol antifreeze
BIRDS	
Earth moving, grading, habitat/vegetation removal	<ul style="list-style-type: none"> ▪ Displacement of breeding birds and the abandonment of active nests (during breeding season) ▪ Loss of eggs and nestlings including ground nesting birds ▪ Loss of foraging habitat in the Reservoir

Table C.3-8. Direct Impacts to Wildlife from Construction, Sediment Removal, and Road Repair Activities	
Activity	Impacts
Noise and vibration	<ul style="list-style-type: none"> ▪ Interference with breeding or foraging activities and movement patterns ▪ Avoidance of areas adjacent to the disturbance zone ▪ Interference with hearing resulting in increased predation ▪ Abandonment of nests
Man-made sources of light	<ul style="list-style-type: none"> ▪ Disturbance or mortality to species that prey on insects attracted to light sources
Placement and use of temporary access roads	<ul style="list-style-type: none"> ▪ Crushing of ground nests
Traffic	<ul style="list-style-type: none"> ▪ Accidental mortality of opportunistic predators and scavengers (such as carrion birds) feeding on road kill ▪ Disruption of breeding, foraging, and movement of bird species resulting in nest, roost, or territory abandonment and subsequent reproductive failure (during breeding season)
Waste	<ul style="list-style-type: none"> ▪ Ingestion of trash or leaked/spilled fluids such as ethylene glycol antifreeze
AMPHIBIANS, REPTILES, AND FISH	
Earth moving, grading, habitat/vegetation removal	<ul style="list-style-type: none"> ▪ Direct mortality to small or less mobile species ▪ Crushing of burrows, disruption of soil surfaces, compaction of soils, and displacement of native species ▪ Fugitive dust and habitat loss ▪ Degradation of water quality in breeding areas from erosion and sedimentation
Noise and vibration	<ul style="list-style-type: none"> ▪ Interference with breeding or foraging activities and movement patterns ▪ Avoidance of areas adjacent to the excavation zone ▪ Interference with hearing resulting in increased predation ▪ Abandonment of burrows
Placement and use of temporary access roads	<ul style="list-style-type: none"> ▪ Unintentional entombment within burrows or aestivation sites ▪ Establishment of ruts or depressions that can alter soil conditions and hydrology ▪ Effect on animal behavior by altering home range use, affect movement patterns, reduce reproductive success, alter escape response, and increase physiological stress
Traffic	<ul style="list-style-type: none"> ▪ Accidental mortality of small diurnal animals from vehicle collision ▪ Secondary vehicular mortality of opportunistic predators and scavengers feeding on road kill

C.3.4.4 Proposed Action/Project

Direct and Indirect Effects Analysis

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or FWS (Criterion BIO1)

Impact BIO-1: The Project would result in temporary and permanent losses of native vegetation.

The Project would result in 11.6 acres of permanent and 65.3 acres of temporary disturbance to vegetation and unvegetated landforms including riparian woodlands, herbaceous wetland, unvegetated lake bottom, and sandy wash. Approximately 5.8 acres of juniper woodland and 5.5 acres of disturbed habitat would be lost at the 47th Street disposal site (See Table C.3-9 and Figures C.3-13, C.3-14, and C.3-15). Sediment disposed at the exhausted quarries would be limited to disturbed areas that do not support native vegetation. The acreages of these communities are based on mapping conducted in 2012 and 2014 and vary in response to scour from winter storms and seasonal flooding.

Table C.3-9. Total Project Disturbance by Location					
Vegetation Community ¹		Type	Total Disturbance in Acres by Location Temporary/Permanent		
Sawyer et al. (2009) Vegetation Classification	Holland (1986) Vegetation Classification		Reservoir ²	Haul Roads	Sediment Disposal Site
Arroyo willow thickets	Southern willow scrub	Riparian	0/0	0/0	0/0
Big sagebrush scrub	Big sagebrush scrub	Upland	0/0	0/0	0/0
Black willow scrub	Riparian scrub	Riparian	2.59/0.14	0/0	0/0
California buckwheat scrub	Mojave mixed woody scrub	Upland	0.02/0	0/0	0/0
California juniper woodland	Mojavean juniper woodland and scrub	Upland	0/0	0/0	5.8/5.8
Cattail marsh	Freshwater marsh	Riparian	0/0	0/0	0/0
Creosote bush scrub	Mojave creosote bush scrub	Upland	0/0	0/0	0/0
Fremont cottonwood forest	Southern cottonwood willow riparian forest	Riparian	0.06/0	0/0	0/0
	Mojave riparian forest				
Herbaceous wetland	Freshwater marsh	Riparian	3.46/0.04	0/0	0/0
Joshua tree woodland	Joshua tree woodland	Upland	0/0	0/0	0/0
Mormon tea scrub	Mojave mixed woody scrub	Upland	0/0	0/0	0/0
	Great Basin mixed scrub				
Rubber rabbitbrush scrub	Rabbitbrush scrub	Upland	0/0	0/0	0/0
Singleleaf pinyon woodland	Mojavean pinyon woodland	Upland	0/0	0/0	0/0
Other Cover Types and Landforms					
Developed		Upland	0/0	0/0	5.5/5.5
Non-native woodland		Upland	0/0	0/0	0/0
Open water		Riparian	0/0	0/0	0/0
Ruderal		Riparian	0/0	0/0	0/0
Sandy wash		Riparian	11.78/0.15	0/0	0/0
Unvegetated lake bottom		Riparian	47.42/0	0/0	0/0
Total			65.33/0.33	0/0	11.3/11.3

1 – Communities in **bold** type are considered sensitive by the CDFW.

2 – Impacts to vegetation in the Reservoir would only occur when the Reservoir is dry. When full, the Reservoir comprises approximately 95 acres of open water.

Prior to construction of the grade control structure or sediment removal activities the Reservoir would be drained to the dead pool elevation (i.e., the lowest water surface elevation that can be achieved). At this time, much of the Reservoir would be limited to recently colonizing vegetation. Construction of the grade control structure would require temporary removal of sediment from the stream channel in order to reach a sufficient depth to ensure the stability of the structure and to provide a safe work area for construction crews. In addition, a small berm and dewatering wells would be placed upstream of the work area to divert stream flows around the work area should they occur. Sediment from the grade control structure would be stockpiled in a downstream area. Once completed, only a narrow portion of the grade control structure would remain at grade. Sediment removal activities would occur throughout the Reservoir in areas previously subject to inundation.

Implementation of the Project would remove vegetation, alter soil conditions, result in the loss of native seed banks, and result in temporary changes in the topography of the drainage. Sediment removal, processing of materials, and associated vehicle travel on Cheseboro Road and other paved streets could result in increased fugitive dust to native vegetation in adjacent areas. Wind-blown dust can degrade soils and vegetation over a wide area (Okin et al., 2001). Dust can have deleterious physiological effects on plants and may affect their productivity and nutritional qualities (Sharifi et al., 1997). Fugitive dust can kill plants by burial and abrasion, interrupt natural processes of nutrient accumulation, and allow the loss of soil resources. The destruction of plants and soil crusts by windblown dust exacerbates the erodibility of soil and accelerates the loss of nutrients (Okin et al., 2001). Additional information on potential direct and indirect impacts to native vegetation is described above under Impacts to Biological Resources from Construction, Sediment Removal, and Road Repair Activities (See also Table C.3-8).

The vast majority of sediment removal activities would occur in unvegetated sandy wash. Most of the vegetation at the Reservoir is limited to scattered elements along the margin of the Reservoir and within a few well defined communities. These areas abut recreation facilities and are routinely subject to disturbance from anglers, recreationists, and OHV use. Riparian habitat would be removed; however, the functional value of the community in the Reservoir has been adversely affected or lost through mortality or previous disturbance and/or removal. While many of the large trees previously mapped as Fremont Cottonwood have been lost through inundation or disturbance, riparian vegetation is found along the stream corridor in the upper end of the Reservoir.

Mortality of submerged riparian vegetation is related to a number of factors including the duration of inundation, water clarity, time of year, and most importantly, the age class of the tree. Plants flooded during early stages of development may not have the energy reserves required to persist for extended periods of time (Gladwin and Roelle, 1998). This factor greatly influences the distribution of riparian trees in the reservoir. Many of the trees in the Reservoir remained submerged for extended periods between 2006 and 2009 as a result of winter storms, the accumulation of sediment, and water delivery requirements. During this period, large areas of riparian forest became decadent and died. Recruitment of new trees was also limited. Sprenger et al. (2001) noted that total submergence of cottonwood seedlings resulted in complete mortality of first-year saplings. While many of the trees are lost, the area still supports important components that are utilized by some wildlife. Similarly, during periods when the Reservoir is drained, a mosaic of native and non-native vegetation can become temporarily established in newly exposed soils; however, these are lost through seasonal inundation.

Ongoing operations and maintenance impacts, including annual sediment removal and repairs to PWD access road below the dam, would be limited to previously disturbed areas of the Reservoir and existing access roads. Impacts to vegetation would be primarily limited to herbaceous plants and saplings; however it is expected that due to the timing of these activities (i.e., immediately after Reservoir draw down) vegetation would have limited time for recruitment in the disturbance area.

Implementation of the Project is not expected to result in the degradation or loss of riparian habitat in downstream areas. The impacts of controlled flows on seedling establishment and survival have been documented in many riparian systems. In some circumstances, the regulation of flow regimes can result in a loss of riparian vegetation along rivers and streams. Implementation of the Project would increase the current storage capacity of Littlerock Reservoir by 463 acre-feet, resulting in diversions by PWD to Palmdale Lake for municipal use within the limits of their annual allotment. Without the Project, PWD would be required to increase water extraction from groundwater wells and further depend on water from the State Water Project.

As described in Section C.7.1.2, about one year in six (16 percent of all years) does not produce enough runoff to fill the reservoir. Based on USGS records, approximately 43 percent of the years (21 out of 49) do not produce sufficient inflow to Littlerock Reservoir to satisfy PWDs allotment. For these years, there would be no difference between without Project and with Project conditions below the dam. The remaining 57 percent of the years with sufficient runoff to satisfy the allotment could be held in the reservoir for diversion to Palmdale Lake. During these periods, water would still overtop the dam and be available for downstream beneficial uses.

On average, for the entire 49 years of record, the overflow volume available below the dam could be reduced by approximately 265 acre-feet annually as a result of the Project. The average annual recharge to the Antelope Valley Groundwater Basin below the dam is estimated at approximately 48,000 acre-feet per year (DWR, 2004). A reduction of 265 acre-feet amounts to 0.55 percent of the total overall recharge to this basin; that is, water that is available to riparian communities below the dam. The reduction of this level of water is not considered an adverse impact. Additionally, leakage through the Dam was maintained during the Dam restoration activities that occurred in 1994.

Although much of the riparian vegetation in the Reservoir and the juniper woodland present at the 47th Street disposal site has been degraded, the removal of these communities would be considered an adverse impact. To reduce impacts to these communities, PWD would implement a series of Standard Project Commitments (SPCs) that include restoration, habitat acquisition, and worker training. Implementation of SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels), and SPC WQ-1 (Prepare Spill Response Plan) would reduce impacts from the Project.

PWD would replace lost vegetation along the margin of the Reservoir and establish riparian communities in backwater areas at a ratio of 3:1. Impacts to juniper woodland would be replaced through habitat acquisition at a ratio of 1.5:1. As described Section C.2 (Air Quality), all existing activities are subject to dust control requirements and prohibitions on visible emissions (APCD Rule 401) and are prohibited from causing dust at a level that constitutes a nuisance (APCD Rule 403). Compliance with these regulations, which typically requires the application of dust control measures, would ensure that the generation of fugitive dust is minimized.

SPCs Applicable to Impact BIO-1

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

CEQA Significance Conclusion

In arid regions such as Southern California, riparian habitats play a particularly crucial role in maintaining biodiversity because up to 80 percent of vertebrate species rely on them for at least part of their lifecycle (Knopf et al., 1988) and because of the central role riparian habitats play in a variety of ecological functions (Rottenborn, 1999; Fischer and Fischenich, 2000). In the Antelope Valley, large areas of riparian habitat and juniper woodlands have been lost to development. However, implementation of Standard Project Commitment (SPC) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels), and SPC WQ-1 (Prepare Spill Response Plan) would ensure impacts to native vegetation remain less than significant (Class III).

Impact BIO-2: The Project would result in the establishment and spread of noxious weeds.

Construction of the grade control structure, sediment removal activities, and road repairs below Littlerock Dam would result in soil disturbance that could introduce new noxious weeds to the Project area, haul roads, or sediment disposal sites. New introductions occur when seeds are inadvertently introduced, most often with mulch, hay bales, or wattles used for erosion control, or when they are transported on construction equipment or tires from off-site areas. Many invasive non-native species are adapted to and promoted by soil disturbance (Lathrop & Archbold, 1980). Once introduced, they can out-compete native species because of minimal water requirements, high germination potential, and high seed production; and can outcompete native annuals where nitrogen deposition (major roadways such as Highway 138) and precipitation rates are higher, leading to higher risk of wildfire (Allen et al., 2010). Weeds can become locally dominant, representing a serious threat to native desert ecosystems (Abella et al., 2008).

The spread of invasive plants is a major threat to biological resources because nonnative plants can displace native plants, increase the threat of wildfire, and supplant wildlife foods that are important to desert tortoise and other herbivorous species. Noxious and invasive weeds pose a threat to the natural processes of plant community succession, fire frequency, biological diversity and species composition. The introduction of noxious and invasive weed species is a special concern for native plant communities and is recognized by the Forest Service as a threat to native vegetation communities and wildlife.

Direct impacts occur when noxious weeds become established in an area by increasing vegetative cover, creating a dense layer that prevents native vegetation from germinating, or altering the edaphic and hydrological conditions. Noxious weeds can create such an unfavorable environment for wildlife that associate, mutualistic species necessary for native plant life cycles, such as seed dispersers, fossorial mammals, or pollinators, are lost from the area.

Indirect impacts attributed to the colonization of noxious weeds could include a gradual decrease in natural biodiversity as noxious weed infestations may extirpate native plant populations. To reduce the potential for the spread of invasive plants, the applicant has proposed measures such as cleaning vehicles and equipment prior to working off-road and restoring temporarily disturbed habitat at the conclusion of construction. Additional information on direct and indirect impacts from weeds is described above under Impacts to Biological Resources from Construction, Sediment Removal, and Road Repair Activities (See also Table C.3-8).

The term “noxious weeds” includes all plants formally designated by the U.S. Secretary of Agriculture or other responsible State official, and these species usually possess one or more of the following characteristics: “aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and being native or new to or not common to the United States or parts thereof” (USFS Manual 2080). The Project site does not currently support a large amount of exotic vegetation, as frequent disturbance by inundation limits the establishment of most plants in the reservoir. However, noxious and invasive weeds are widespread in the region and several species occur along Cheseboro Road, along the access road to the Dam, and the proposed disposal sites. Although the region currently supports wide populations of noxious weeds, the introduction of new species not currently present in the Project area or the spread of noxious plant species would be considered an adverse impact.

To reduce impacts from the spread or establishment of weeds, PWD would implement SPC-BIO-2 (Prepare and Implement a Weed Control Plan) which includes guidelines for the use of weed control treatments (i.e., herbicide, manual, and mechanical methods) during construction of the grade control

structure, sediment removal, and road repair activities. The implementation of SPC-BIO-1a (Restoration/Compensation for Impacts to Native Vegetation Communities) and SPC-BIO-1b (Worker Environmental Awareness Program) would further reduce the spread of invasive plants through restoration and detection. Each of the proposed SPCs described above combine to provide a suite of Best Management Practices (BMPs) intended to reduce the spread of noxious or invasive weeds on the Project site. These include common measures such as stabilizing soils, limiting erosion, reducing ground disturbance, targeting local weed infestations, cleaning vehicles and equipment, and comprehensive actions such as restoration, weed management, and the acquisition of mitigation lands.

The Weed Control Plan, including the control methods to be used, would be prepared consistent with the FS's *Plan for Invasive Plants, Angeles National Forest and San Gabriel Mountains National Monument Environmental Assessment (EA)* (September 2015). Control of weeds would be important to ensure successful establishment of native vegetation along the Reservoir and to prevent new infestations along the access roads. However, manual treatments and herbicide use can result in indirect impacts to vegetation and wildlife in the Reservoir and in off-site riparian and aquatic habitat unless appropriate precautions are implemented, as outlined in the *Plan for Invasive Plants EA*. Any herbicide use would conform to the FS's *Plan for Invasive Plants EA*, including formulations to be used and the methods of application. Adhering to this existing FS guidance on weed control would ensure that any mechanical or chemical weed control implemented as part of the proposed Project would not result in secondary impacts to vegetation or wildlife.

The management of weed infestations is best accomplished by species-specific methodologies, which may include herbicide application, mechanical removal, and bio-control methods such as sheep grazing. Due to typically large seed banks and the ability of some weed species to re-sprout following removal methods, most species require more than one round of treatment, or require a different follow-up treatment method after the initial removal occurs. However, effective weed management is expected to be successful with the proposed monitoring and reporting standards. Implementation of the SPCs described above, in accordance with the existing FS weed management guidelines, would provide a reasonable and feasible suite of mechanisms that would be effective in reducing impacts from the spread of invasive or noxious weeds from the proposed project. Table C.3-10 contains a list of herbicides, including their potential risks to native vegetation and wildlife, which are proposed for use within the Project area on National Forest System lands. It is important to note that there is an extensive variability related to different types of exposure scenarios and dosages for each herbicide. Furthermore, the effects of certain herbicides can vary exclusively at the species level. Therefore, the information presented in Table 3.3-10 is intended as a general overview of the possible effects of herbicide use. Of the four herbicides listed in Table C.3-10, glyphosate would most likely be used within the Project area. However, the application of any herbicide would be conducted by a licensed herbicide applicator. Full analyses on the effects of these four listed herbicides on human and ecological health can be found in the Forest Service Risk Assessment Final Reports (<http://www.fs.fed.us/foresthealth/pesticide/risk.shtml>) and the *Plan for Invasive Plants, Angeles National Forest and San Gabriel Mountains National Monument Environmental Assessment* (September 2015) and is incorporated by reference.

Table C.3-10. General Effects of Herbicides on Plant and Wildlife Species		
Herbicide	Effects on Vegetation	Effects on Wildlife
Chlorsulfuron	Rate and extent of uptake following foliar application varies by species Inhibits an enzyme that is essential for plant growth	Causes weight loss and decreased body weight gain in experimental mammals Appears to have low toxicity in mammals, birds, fish, and invertebrates
Glyphosate	Inhibits shikimic acid pathway, effectively blocking synthesis of certain phenolic compounds and aromatic amino acids Inhibits photosynthesis, respiration, and nucleic acid synthesis	May reduce food conversion efficiency leading to loss of body weight in mammals and birds Certain surfactants used with glyphosate are much more toxic to fish than others May cause histological changes in gills, kidneys, and liver of some fish
Imazapyr	Inhibits an enzyme that is essential for plant growth Practically non-toxic to conifers	Appears to be relatively non-toxic to terrestrial and aquatic animals
Triclopyr	Mimics indole auxin plant growth hormones causing uncontrollable growth At sufficiently high levels of exposure, abnormal growth is so severe that vital functions cannot be maintained and plants die	May cause developmental effects at levels that cause maternal toxicity in mammals May have adverse effect on mammalian kidney functions Higher concentrations may cause mortality or immobility in frog tadpoles Larger doses may cause a decrease in body length and smaller doses may lead to lethargic behavior in some fish Relatively non-toxic to birds

Source: <http://www.fs.fed.us/foresthealth/pesticide/risk.shtml>

While the overall benefits of herbicide use are generally straightforward, herbicide use may have detrimental effects on ecosystem values and functions. As noted in the CNPS Policy on the use of herbicides in situations where native vegetation may be affected, the tradeoff between the benefits and costs of using herbicide – either proven or alleged – has made it difficult for the public at large, CNPS members, other organizations, and public agencies to evaluate whether or not to use herbicides (CNPS, 2008). It is generally desirable to select an herbicide that has low toxicity, would not move from its target or leach into groundwater (low water solubility), and would not remain in the environment for a long period of time (low persistence). Furthermore, the application method selected depends on the type of control needed, the type of vegetation, and the site situation (site conditions and locations). Not all herbicides or application methods are equally appropriate, effective, or safe, given different site conditions and weed species.

There are several exposure scenarios possible for herbicides and wildlife. These include direct spray; indirect contact through grooming or contact with affected vegetation; and ingestion of contaminated media, including vegetation, prey species, and water. Because of the relationship of body weight to surface area and to the consumption of food and water, small animals would generally receive a higher dose, in terms of body weight, than large animals would receive for a given type of exposure (Durkin, 2007). However with the Project SPCs and compliance with existing FS guidelines on herbicide application, the potential for impacts to aquatic fauna would be minimized. For non-target terrestrial plants, the primary hazard is unintended direct spray or spray drift. Off-site drift typically depends on the droplet size and meteorological conditions. Other off-site exposure scenarios for vegetation include percolation, runoff, sediment transport, and wind erosion. Although overspray may adversely affect some non-target species, the removal of noxious or invasive weeds and the control of existing populations would be considered a beneficial effect. To reduce the effects of herbicides on listed species including arroyo toads (located upstream of the proposed grade control structure), if used, PWD would implement SPC BIO-2 (Prepare and Implement a Weed Control Plan), which would include guidelines for

the use of weed control treatments (i.e., herbicide, manual, and mechanical methods) to reduce the risk of overspray or non-target application.

SPCs Applicable to Impact BIO-2

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

CEQA Significance Conclusion

Due to the intense effects of noxious weed establishment and the difficulty in controlling existing infestations or restoring arid habitats, Project-related activities that result in the spread of noxious weed populations would have long-lasting consequences for desert and riparian communities in the Project area. To reduce the potential spread of weeds, PWD would implement SPC B-2 (Prepare and Implement a Weed Control Plan). The implementation of SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) and SPC BIO-1b (Worker Environmental Awareness Program) would further reduce the spread of invasive plants through restoration and detection. Incorporation of these SPCs would ensure impacts from weeds remain less than significant (Class III).

Habitat-Related Impacts to Wildlife

Impact BIO-3: The Project would cause the loss of foraging habitat for wildlife or result in disturbance to wildlife in adjacent habitat.

The Reservoir and surrounding NFS lands support a broad assemblage of wildlife. Natural lands on the sediment disposal site at 47th street, while disturbed, provide foraging habitat for a number of species. Some of these species potentially affected by the Project are permanent residents such as black bear, mountain lion, desert kit fox, and American badger. Other species including bald eagles and ferruginous hawks are winter residents that forage in the region.

Direct impacts from the Project would include temporary disturbance of vegetation communities and land forms (i.e., the unvegetated Reservoir bottom) utilized as foraging habitat for common and rare wildlife, fugitive dust, and increased noise levels due to heavy equipment and vehicle traffic. Other direct impacts include mortality from trampling or crushing; increased noise levels due to heavy equipment use; light impacts from construction during low-light periods; increased vehicular and human presence along existing access roads. Noise from clearing, grading, and construction activities could affect wildlife in adjacent habitats by interfering with breeding or foraging activities and movement patterns, causing animals to temporarily avoid areas adjacent to the construction zone. Construction could affect nocturnal wildlife that roost in the Project area by displacing these species and increasing their risk of injury or mortality. More mobile species such as birds and larger mammals would likely disperse into adjacent habitat areas during sediment removal activities. However, smaller animals along the margins of the reservoir or at sediment disposal sites would be less able to disperse.

Sediment removal activities would require extensive road use along Cheseboro Road and other designated haul routes. Roads and vehicle use can affect animal behavior by altering home range use, affect movement patterns, reduce reproductive success, alter escape response, and increase physiological stress (Trombulak and Frissell, 2000). Edge effects from roads can last well past the time of construction. Vehicles using Cheseboro Road would result in an increase in accidental wildlife mortality from road kill. Diurnal reptiles such as western fence lizard and small mammals including California

ground squirrels are most likely to be present on access roads and would be more vulnerable to vehicle accidents. Animals killed along access roads as a result of the Project could attract opportunistic predators such as ravens which could act as a subsidy to this species.

Indirect impacts to foraging habitat could include alterations to existing topographical and hydrological conditions, increased erosion and sediment transport, and the establishment of noxious weeds. Operational impacts from annual sediment removal include increased human presence, the spread of noxious weeds, and vehicle traffic.

Construction activities associated with the Project would result in disturbance to a variety of wildlife. With the exception of some good quality riparian vegetation the majority of the Reservoir consists of sparsely to unvegetated wash. Construction activities would limit the ability for some species to forage at the Reservoir for several months at a time. However, access to surface water is generally present above and below the dam and work would not be conducted at night when many species are foraging. Similarly, construction activities would stop at the commencement of the rainy season. Nonetheless, the loss of juniper woodland, although subject to disturbance from ongoing anthropogenic disturbance, and the reduction in access to the Reservoir to wildlife over the life of the Project would be considered adverse and remove nesting and foraging habitat for wildlife. Similarly, even disturbed areas may provide access to edge habitats or early successional plant communities which are preferred foraging areas for some wildlife species.

To reduce impacts to wildlife from the loss of important foraging habitat or project disturbance, the PWD would implement SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), and SPC BIO-2 (Prepare and Implement a Weed Control Plan). These measures include the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education and the control of invasive weeds. Implementation of these SPCs would provide for the protection of common wildlife by educating workers on the avoidance mechanisms in place to avoid impacts to common and sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. The measures would include directives that educate workers regarding reduced vehicle speeds and housekeeping activities that reduce conflicts with native species.

SPCs Applicable to Impact BIO-3

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

CEQA Significance Conclusion

Project-related impacts on common wildlife are typically not considered significant under CEQA. However, the large scale of the Project and the required annual sediment removal activities would result in long-term operational impacts to a wide variety of snakes, amphibians, small mammals, and birds. Implementation of SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), and SPC BIO-2 (Prepare and Implement a Weed Control Plan) would ensure impacts to common wildlife would remain less than significant (Class III).

Impact BIO-4: The Project would result in disturbance to nesting birds or raptors.

The Project site provides foraging, cover, and/or breeding habitat for a variety of resident and migratory birds. Nesting birds have been commonly observed nesting in the few remaining trees along the margins of the Reservoir, in native vegetation adjacent to parking areas, and on open ground within the stream channel. Nesting birds have been observed in riparian vegetation below the dam and in upstream areas. Juniper trees present at the 47th Street sediment disposal site provide rare substrate in the desert and support nesting habitat for a variety of birds. Scattered Joshua trees, which were also documented at the 47th Street disposal site, are another important nest substrate in the desert. Although not detected in the Project area, Joshua trees often support nesting for large birds including raptors. During surveys of the Project site, nesting birds were detected in crevices on the steep walls of the Reservoir.

Direct impacts to nesting birds include ground-disturbing activities associated with construction of the grade control structure, sediment removal activities, and road repairs below Littlerock Dam, as well as increased noise levels from heavy equipment, increased human presence, and exposure to fugitive dust. Construction and operations during the breeding season could result in the displacement of breeding birds and the abandonment of active nests, as well as a disruption in foraging activity.

Indirect impacts to nesting birds could include the loss of habitat due to the colonization of weeds, dust, or human disturbance due to repairs to the access road or routine inspection of the Reservoir. Weed management could also affect nesting.

Ground-disturbing activities associated with the Project have the potential to disturb nesting birds. The removal of habitat during the breeding season could result in the displacement of breeding birds and the abandonment of active nests. Breeding birds and other wildlife may temporarily or permanently leave their territories to avoid construction activities, which could lead to reduced reproductive success and increased mortality. Increased vehicle travel on Cheseboro Road and other access routes could displace nesting birds or result in lower nest success.

Construction of the grade control structure would be initiated in July toward the end of the breeding season which would reduce the potential for nesting birds to be present in the work areas. Sediment removal activities commence after Labor Day and continue until mid- to late November. This would greatly reduce the potential for nesting birds to be present in the work area. However, some birds remain on the nest well into July and nesting periods are affected by a number of factors including weather and access to forage. Similarly, some birds even in desert regions would be expected to have active nests or young well into the summer. Depending on the species, birds may actively nest on the ground close to equipment, on spoil piles, or idle construction equipment. In other arid ecosystems in Southern California, birds have been documented nesting on vehicles, foundations, construction trailers, and equipment left overnight or during a long weekend. With the exception of a few non-native birds such as European starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*), the loss of active bird nests or young is regulated by the Federal Migratory Bird Treaty Act (MBTA) and Fish and Game Code Section 3503 and would be considered an adverse impact.

To minimize impacts to nesting birds PWD would Implement SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) and SPC BIO-1b (Worker Environmental Awareness Program). Implementation of these SPCs would protect nesting birds through worker education, pre-construction surveys for nesting birds, avoidance of active nest sites, construction monitoring, and the control of fugitive dust. A discussion of potential impacts to special-status birds is presented below.

SPCs Applicable to Impact BIO-4

SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds)

SPC BIO-1b (Worker Environmental Awareness Program)

CEQA Significance Conclusion

The loss or abandonment of nests, eggs, or their young would be a violation of State and federal law. To avoid potential impacts to nesting birds, PWD would implement SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) and SPC BIO-1b (Worker Environmental Awareness Program). Implementation of SPC BIO-4 would establish a 300-foot buffer around active nest sites to provide for the protection of nesting birds, while SPC BIO-1b would educate workers on mitigation requirements and the sensitivities of plant and wildlife species. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Have an adverse effect, either directly or through habitat modifications, on any species listed as fully protected, endangered, threatened, or proposed or critical habitat for these species (Criterion BIO2)

Threatened and Endangered Plant Species

Impact BIO-5: The Project could disturb endangered, threatened, or proposed plant species or their habitat.

State or federally listed plant species were not detected in the Project area. Although native plant communities are present there is no indication that rare plants occur or have the potential to occur in the Reservoir or at the proposed grade control location. Nearby habitat could potentially support sensitive plants and three Forest Service sensitive species were detected. Listed plants were not found at the proposed 47th Street East sediment disposal site. However, seasonal rainfall across Southern California has been extremely limited which could reduce the potential to detect sensitive plants at the proposed sediment disposal sites or along the margins of the Reservoir.

Focused botanical surveys of the Reservoir and access roads were conducted on 16 May 2007, 23 May 2010, 7 Jul 2011, 20 May 2012, and 30 May 2012. Surveys of the 47th Street sediment disposal site were conducted on 16 April 2014. The recent drought has limited the detectability of some annual plants in the Project area. However, plant expression was considered good to excellent in many portions of the alignment during the 2007 to 2008 rain years. Surveys conducted during this period resulted in good plant detection including ephemeral annuals that cannot be detected in some years. Subsequent surveys including a summer survey conducted in 2011 provided access to plants responding to summer monsoons. With the exception of the 47th Street East sediment disposal site all of the Project areas received multiple botanical surveys.

Listed plant populations are not expected to occur in the Project area and would not be adversely affected by the Project. However, because plant expression can vary and rainfall has been patchy in the Project area, the PWD would conduct pre-construction surveys of the 47th Street East sediment disposal site. If listed plant species are detected PWD would not place sediment or disrupt natural hydrology within 200 feet of the population. The following SPCs would also be implemented to avoid impacts to listed plant species: SPC BIO-5 (Conduct Preconstruction Surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Forest Service Sensitive Plants and Avoid Any Located Occurrences of Listed Plants), SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native

Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), and SPC BIO-2 (Prepare and Implement a Weed Control Plan). SPC BIO-1a and SPC BIO-1b would limit construction work to previously surveyed and historically disturbed areas (i.e., the Reservoir) while using best management practices. SPC BIO-2 (Prepare and Implement a Weed Control Plan) would prevent or reduce the potential spread of noxious weeds, control existing weed populations, and restore native habitats as required by Forest Service Manual 2080.

SPCs Applicable to Impact BIO-5

SPC BIO-5 (Conduct Preconstruction Surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Forest Service Sensitive Plants and Avoid Any Located Occurrences of Listed Plants)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

CEQA Significance Conclusion

Listed plant species were not identified during focused surveys of the Project. Implementation of SPC BIO-5 (Conduct Preconstruction Surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Forest Service Sensitive Plants and Avoid Any Located Occurrences of Listed Plants), SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), and SPC BIO-2 (Prepare and Implement a Weed Control Plan) would ensure impacts to listed plants remain less than significant (Class III).

Threatened and Endangered Wildlife

Habitat in the Project area has the potential to support a variety of State and federally listed wildlife species. Two federally listed species occur in the Project area: arroyo toad and least Bell's vireo. Arroyo toad is present in Little Rock Creek above Rocky Point and least Bell's vireos were documented below the dam downstream of the existing PWD access road. Mountain yellow-legged frogs occur in the upper watershed but are not expected at the Reservoir. Three other State or federally listed species or species proposed for listing have the potential to occur at the Reservoir or sediment disposal sites. These include:

- California condor
- Southwestern willow flycatcher
- Swainson's hawk

Threatened or Endangered Invertebrates

There are no known threatened or endangered invertebrates in Littlerock Reservoir, Little Rock Creek, or the proposed sediment disposal areas.

Threatened and Endangered Amphibians

The presence of and potential for amphibians to occur in the Project area is linked to the physical characteristics of the landscape, existing anthropogenic activities (i.e., human trampling, OHV, and road traffic) and the presence of non-native predatory fish in the Reservoir. The operation of the Reservoir,

which includes wide fluctuations in water surface elevations, also affects the distribution of amphibians in the Project area. Amphibians often require a source of standing or flowing water to complete their life cycle. However, some more terrestrial species including arroyo toads known from the Project area are linked to aquatic resources for a very limited time during the breeding season and spend significant times away from the creek channel. Other species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. These xeric-adapted species conserve moisture by emerging only under conditions of high humidity or when the weather is cool and/or wet. Depending on the location portions of the Project area provide suitable habitat for amphibians.

In southern California, mountain yellow-legged frogs inhabit rocky and shaded streams from 1,200 to 7,500 feet elevation. Typical habitat consists of perennial creeks fed by snowmelt and springs. Non-aquatic habitats commonly include willow, alder, and big-cone spruce at lower elevations and various pines, white fir, and incense cedar at higher elevations. (USFWS, 2012). Mountain yellow-legged frogs have not been detected during focused surveys of the Project area, have not been recorded in the vicinity, and are not expected to occur at the Reservoir.

Contaminated Fish Removal. The Littlerock Reservoir does not support any species of native fish. As discussed in Section B.2.3.2, all non-native fish will be removed from the Reservoir during sediment removal activities in order to improve habitat conditions for arroyo toad and other native species. The fish tissue that was sampled from the Reservoir show a large number of contaminants at high levels, relative to the sediment samples (see Section C.3.1.5). Based on the surveys conducted by the SWRCB and the Lahontan Regional Water Quality Control Board, animals ingesting fish from the Reservoir would be exposed to elevated levels of mercury and PCBs (LRWQCB, 2014). Removal of invasive fish during the Project's first year of sediment excavation would create a beneficial effect on wildlife that would otherwise be at risk from ingesting fish with elevated levels of contaminants.

Impact BIO-6: The Project would result in loss or disturbance to arroyo toads.

The arroyo toad (*Anaxyrus californicus*) is federally listed as endangered and a CDFW Species of Special Concern. The current distribution of arroyo toad in the Project area is well studied and appears limited to Little Rock Creek above Rocky Point and Santiago Creek, a tributary drainage (See Figure C.3-16). Ramirez (Cadre, 2002) conducted a radio telemetry study of this species above Rocky Point in 2002. Similarly, the Forest Service conducts routine surveys of this population. In addition, Aspen has conducted numerous diurnal and nocturnal inspections of the Project area for over seven years in coordination with Forest Service and CDFW biologists. This species was not found during surveys of the small side canyons that flow into the Reservoir below Rocky Point or in Little Rock Creek below the dam.

Factors influencing survival between breeding seasons may include desiccation, starvation, predation by native and introduced species, and activities that disturb non-breeding habitats (Sweet, 1992). Drought, especially when combined with water diversions from streams, can lead to a scarcity or early drying of breeding pools and restrict foraging during the period essential for rapid growth. Drought and water diversions also cause the loss of damp subsurface soil, which may result in high adult mortality (Sweet, 1992). The extended 5-year drought in Southern California during the late 1980s has been closely tied to extremely low reproductive success and subsequent population declines of arroyo toads during this period (Sweet, 1992). During the 2006-2007 rain year, one of the driest years on record in Southern California, reproduction of this species was also reduced. Protocol surveys conducted by Aspen at Little Rock Creek and Castaic Creek on the ANF detected little evidence of large-scale breeding and few

metamorph toads were identified later in the season. Conversely Aspen noted numerous metamorph toads during surveys at Littlerock in 2010.

Direct impacts to arroyo toad could occur as a result of crushing from pedestrian traffic, mechanized equipment, temporary disruption of foraging or thermoregulation sites in adjacent upland areas, fugitive dust, or the disruption of egg masses from impacts to water quality. Arroyo toads spend the majority of their life cycles well away from aquatic habitat, that is, post breeding this species occupies streamside terraces and adjacent uplands and impacts to adjacent vegetation can have deleterious effects on this species (Cadre, 2002). Breeding behavior could also be disrupted due to construction noise.

Disturbance would be associated with the temporary removal of vegetation for the grade control structure and sediment removal activities. The Project would result in a permanent loss of 0.33 acre of suitable habitat. Construction activity may result in the incidental take of individual toads, egg masses, and larvae depending on the construction season. Because this species is largely nocturnal, impacts from pedestrian traffic and vehicle use at dawn, dusk, and during the evening would be of concern because this species is known to traverse roads between riparian and upland habitats, especially during rain events. Large numbers of toads, both adults and juveniles, can be active at night during the spring and early summer under otherwise dry conditions. During these activities, toads may move onto and across roads, where they are subject to road kill by passing vehicles.

Direct effects to juvenile toads may also occur. In many cases, recruitment of metamorphic arroyo toads may occur in only a small section of the stream, even if breeding activity has been more widely distributed. Observations on the Los Padres National Forest (Sweet, 1992) and on other sites in Orange and San Diego Counties indicate that even brief human activities are likely to result in substantial mortality of metamorphic toads. This is usually not a deliberate act; the cryptic nature, very small size (less than 20 mm or 0.8 in) and immobility (when on the surface) of metamorphic toads foster accidental trampling.

Indirect effects to this species may be caused by the diversion or modification of water flows at the grade control structure, increased downstream sediment transport, or the establishment of noxious weeds. Human activities can indirectly affect arroyo toads by increased noise or by attracting predators such as the common raven, kit fox, and coyote from trash and litter (Boarman, 2004). Other indirect effects could result from fuel, lubricant, or concrete spills (used in the soil cement for the grade control structure) near water, which could be mobilized into the water by a subsequent storm event and cause lethal or sublethal poisoning effects.

Operational impacts to arroyo toad are similar to sediment removal activities and include crushing by vehicles, trampling, increased sedimentation, dust, and the spread of exotic weeds. The timing and delivery of water releases from the Reservoir can also adversely affect egg masses, larvae, and metamorph toads if they become stranded by receding water surface elevations. USGS (2003) found that toads were at the greatest risk of loss from water deliveries during the months of April, May and June at the Sweetwater Reservoir. While seasonal variations in breeding occur, toads at Little Rock Creek would be at risk during this same period.

Arroyo toad has the potential to move into the Reservoir as the water level recedes; however, this species has not been detected below Rocky Point as of 2014. Animals that move into this area are susceptible to predation by non-native fish, mechanical crushing from OHVs, or trampling. Predatory non-native species have been identified as a significant threat to this species (Stephenson and Calcarone, 1999), and game fish in the reservoir would prey on any toads or larvae present. Animals that

aestivate in the seasonally dry portions of the Reservoir would likely drown as water levels return to winter levels and aestivation sites become submerged.

Implementation of the Project has the potential to adversely affect arroyo toads and may result in loss or mortality. In order to avoid or minimize impacts to arroyo toad, PWD would implement a series of actions that include general construction best management practices described in SPC BIO-1b (Worker Environmental Awareness Program), and specific measures focused on the arroyo toad. SPC-BIO-6a (Conduct Surveys and Implement Avoidance Measures), SPC BIO-6b (Conduct Clearance Surveys and Construction Monitoring), and SPC BIO-6c (Seasonal Surveys During Water Deliveries) describe the proposed methods that would be implemented during construction of the grade control structure sediment removal activities, and during scheduled water releases.

Under SPC BIO-6a (Conduct Surveys and Implement Avoidance Measures), PWD would limit sediment removal activity to seasonally inundated portions of the Reservoir after the water has been lowered in the late summer months. Arroyo toads are not expected to occur in this area or be limited to the upstream margin of the Reservoir. The greatest potential risk to arroyo toads would be the construction of the grade control structure. This area supports suitable habitat as the water levels recedes and is adjacent to occupied habitat. Animals in upstream areas could forage in this area or burrow into soft, moist sands during the day. In accordance with SPC BIO-6a, PWD would conduct pre-construction surveys of the Project area and install toad fencing along the upstream margin of the Reservoir to reduce the potential for toads to enter the proposed work area. PWD would install fencing around the entire work area and would include mesh screens on diversion structures to prevent animals from entering the Reservoir from a culvert.

Per SPC BIO-6b (Conduct Clearance Surveys and Construction Monitoring), PWD would conduct clearance surveys of the fenced work area prior to excavation, monitor construction, and implement other best management practices such as good housekeeping, inspecting equipment for leaks, and following the fieldwork code of practice developed by the Declining Amphibian Population Taskforce. Clearance surveys would be conducted at night and during daylight periods to increase the potential to locate any toads that may occur within the exclusion area.

Per SPC BIO-6c (Seasonal Surveys During Water Deliveries), PWD would conduct annual monitoring and reporting at the Reservoir to reduce the potential stranding of arroyo toads egg strings, larvae, or metamorphs during water deliveries. At the maximum water surface elevation, the edge of the Reservoir merges with sandy terraces above Rocky Point. This interface provides approximately 3,015 feet of shoreline that would be directly affected by water deliveries from the Reservoir. Although the water is deep enough in many areas to support non-native fish, it is possible that arroyo toads may produce egg strings in the shallow margins of the Reservoir. In a study conducted by USGS (2003) at the Sweetwater Reservoir, it was postulated that eggs, larvae and metamorphs would have varying ranges of mortality risk due to their placement (i.e., egg strings in shallow water) or their mobility. Eggs were assumed to be at greatest risk with 80 to 100 percent estimated to be lost as a result of a dam release from being stranded on the shore or in quickly drying pools (ibid). Due to their mobility, larvae are assumed to have a greater chance of surviving a release event with 50 to 100 percent estimated to be lost as a result of a dam release and can possibly swim to safety or track the falling water levels to avoid getting displaced or stranded. Due to their mobility and ability to leave the streambed, metamorphs were assumed to have the greatest chance of surviving a release event with 0 to 50 percent estimated to be lost as a result of a dam release (ibid).

To reduce potential impacts to this species PWD would implement SPC BIO-6a (Conduct Surveys and Implement Avoidance Measures), SPC BIO-6b (Conduct Clearance Surveys and Construction Monitoring), and SPC BIO-6c (Seasonal Surveys During Water Deliveries). In addition, SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels), SPC WQ-1 (Prepare Spill Response Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts from the spread of weeds, contaminated water, and fugitive dust.

SPCs Applicable to Impact BIO-6

SPC BIO-6a (Conduct Surveys and Implement Avoidance Measures)

SPC BIO-6b (Conduct Clearance Surveys and Construction Monitoring)

SPC BIO-6c (Seasonal Surveys During Water Deliveries)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels)

SPC WQ-1 (Prepare Spill Response Plan)

CEQA Significance Conclusion

To reduce potential impacts to arroyo toad eggs, larvae, metamorphs, and adult toads, PWD would implement SPC BIO-6a (Conduct Surveys and Implement Avoidance Measures), SPC Bio 6b (Conduct Surveys and Implement Avoidance Measures), and SPC BIO-6c (Seasonal Surveys During Water Deliveries). In addition SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels), SPC WQ-1 (Prepare Spill Response Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds). Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Threatened and Endangered Reptiles

There are no known threatened or endangered reptiles in Littlerock Reservoir, Little Rock Creek, or the proposed sediment disposal areas. Protocol surveys for desert tortoise were conducted on the sediment disposal site and evidence of this species was not observed. Although the sediment disposal site supports habitat for this species the site is subject to routine disturbance, is functionally isolated from known occupied habitat, and is nearly surrounded by urban development. No records for desert tortoise exist within the Project area and no sign of their presence was detected during protocol surveys.

Threatened or Endangered Fish

There are no known threatened or endangered fish in the Littlerock Reservoir, Little Rock Creek, or the proposed sediment disposal areas. Threatened or endangered fish are not expected to be affected by the Project.

Threatened, Endangered, or Fully Protected Birds

Several State and federally listed bird species have the potential to occur at Littlerock Reservoir, Little Rock Creek, or the proposed sediment disposal area. Least Bell's vireo has been documented below the dam and fledged chicks in 2011. California condor, while not observed, is a far ranging species, which could water at the Reservoir. Swainson's hawks were not detected, but could forage near the sediment disposal site. Bald eagle is a periodic winter visitor to the Reservoir and it is possible that golden eagles forage in the area. Similarly, many species of migratory birds may be short-term seasonal visitors to the Project area.

Impact BIO-7: The Project could result in the loss of California condors.

The California condor is considered present on the ANF and may soar over portions of the Project site. Although condors have not been observed at the Reservoir, they occur broadly over the region during foraging trips. They have been documented roosting or loitering at Whittaker Peak, Bear Divide, and Mt. Lukens on the ANF.

California condors are a wide ranging species with potential to occur at any time within the Project area. USFWS management of condors includes use of feeding stations strategically located to direct condor activity away from areas where human activity is high. The supplemental feeding program has been successful in directing condors to areas within USFWS managed refuge lands. However, over the life of this Project, it is possible that individual condors could fly over or stop in the Project area.

Within the Project area, the greatest risk for condors is associated with the potential for ingestion of objects such as microtrash (i.e. broken glass, hardware, plastic waste, bottle caps, small pieces of metal) or substances such as ethylene glycol antifreeze. These are existing conditions present within the Littlerock site and not associated with the project activities. Adults can bring microtrash back to nest sites where young birds can be injured or killed when they ingest the material. California condors are known to forage on a variety of carrion including small mammals such as jack rabbits (Collins, 2000) and may be attracted to small animals killed during construction activities on the proposed haul routes. Other hazards include power line collisions or vehicle strikes. The proposed action includes SPCs to avoid injury or mortality to California condors.

While California condors are not currently present in the Project area, they could become periodic visitors as their population increases. Proper implementation of Project SPCs will ensure avoidance of potential impacts to condors. PWD would implement SPC BIO-7 (Monitor Construction and Remove Trash and Microtrash), which includes periodic monitoring, cessation of Project activities within 500 feet of a California condor, and the removal of microtrash, waste, and road kill from the Project site. In addition, the implementation of SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would reduce impacts from the spread of weeds, limit fugitive dust, and further reduce potential for Project impacts to any condors that might visit the Project area.

SPCs Applicable to Impact BIO-7

SPC BIO-7 (Monitor Construction and Remove Trash and Microtrash)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

California condors are not present in the Project area but could become periodic visitors as their populations increase. To avoid potential for impacts to California condor, PWD would implement SPC BIO-7 (Monitor Construction and Remove Trash and Microtrash) which includes periodic monitoring, the cessation of Project activities within 500 feet of a California condor, and the removal of Project-generated debris, trash, waste, and road kill from the Project site. In addition, SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would reduce impacts from the spread of weeds, limit fugitive dust, and avoid the potential for Project-related impacts to this species if present. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Impact BIO-8: The Project could disturb nesting willow flycatchers, southwestern willow flycatchers, least Bell's vireos, or their habitat.

Willow flycatchers, including the federally listed southwestern willow flycatcher, have not been documented breeding within the Project area. Five willow flycatchers of undetermined subspecies were observed in riparian habitat below the dam and in Little Rock Creek on May 18, 2012. No breeding activity was detected, and no willow flycatchers were observed during follow-up surveys in July 2012. It is unknown whether these individuals were the federally listed southwestern willow flycatcher or a different subspecies (all subspecies are state listed). It was determined that the individuals were migrants, and no breeding is expected at these locations because the habitat quality is not typical of the habitat used by breeding southwestern willow flycatchers, and the Project area is well south of the breeding range for the other willow flycatcher subspecies.

Potential threats that have been identified on NFS lands are directed towards nesting habitat and include wildfires and resultant flooding, water diversion or extraction, unauthorized vehicle use, high levels of dispersed recreation, road and trail construction and use, invasive non-native vegetation, cowbird parasitism, and predation. However, suitable breeding habitat for willow flycatchers is not present at the Reservoir.

Least Bell's vireo nest below the dam but have not been observed at the Reservoir. Suitable habitat for this species may become established above Rocky Point given limited scouring and seasonal access to water. Critical Habitat for this species is not present in the Project area. Project activities have potential to impact least Bell's vireos through ground-disturbing activities associated with construction of the grade control structure, sediment removal, road repair activities, increased noise levels from heavy equipment, increased human presence, and exposure to fugitive dust. However, SPCs have been incorporated into the Project to minimize or avoid impacts to nesting least Bell's vireos, as described below.

Least Bell's vireos are not expected to nest at the Reservoir and would not be affected by the construction of the grade control structure, sediment removal, or road repair activities. The most likely disturbance to this species would be from haul trucks driving on Cheseboro Road and repairs to the access road below the dam. The nests are located in Little Rock Creek east and adjacent to Cheseboro Road. The creek in this area is located in a deep channel (approximately 40 to 80 feet) below the

elevation of the road. Sound measurements taken below the dam — see Section C.8 (Noise) — identify that the area has low ambient noise when water is not flowing. During periods of heavy flow (i.e., winter and early spring), the noise from the creek can easily exceed 60 dB(A) at the nest sites. Road noise or dust may adversely affect nesting birds. Many riparian birds including least Bell's vireo and other neo-tropical migrants are adversely affected by noise and human disturbance. Reijnen et al., 1995 demonstrated that for two species of European warbler (*Phylloscopus* spp.), sound levels between 26 dB(A) and 40 dB(A) reduced breeding density by up to 60 percent compared to areas without disturbance. In addition, while current sound thresholds for most birds in California are considered to be approximately 60 dB(A), this level may still adversely affect breeding success for least Bell's vireo. W. Haas (personal communication, 2007) reported that in 1999, sound levels were recorded at 87 locations containing similar habitat conditions in the vicinity of the San Luis Rey River, the most robust and stable population of flycatchers in California. Data indicated that noise levels were the most important factor for occupancy. These data suggest disturbance from adjacent road noise and urban development may be a contributing factor in the use of habitat adjacent to developed areas. Conversely Aspen has noted least Bell's vireo successfully fledging chicks in a number of locations with high levels of ambient noise. This includes urban areas of Murrieta Creek, at the Santa Clara River Highway 101 overpass in Ventura, and at Prado Dam in Riverside County.

Construction of the grade control structure would be initiated in July toward the end of the breeding season, which would reduce the potential for least Bell's vireo and other breeding neo-tropical migrants to be present in the work areas. Sediment removal activities commence after Labor Day and continue until mid- to late November. However, many birds remain on the nest well into July and nesting periods are affected by a number of factors including weather and access to forage.

Project activities will have no direct effects on nesting least Bell's vireos below the dam, but foraging birds may avoid areas closest to the road during haul periods. Fugitive dust is not expected since the access road has an asphalt surface. Use, maintenance, and repair of the access road will occur on an as-needed basis. Therefore, these activities could occur during the reproductive season. Habitat in immediate proximity of the road is not suitable for nesting least Bell's vireos, but could be used by foraging birds. Access road use, maintenance, and repair could lead to some short-term displacement of foraging birds. No permanent displacement or impacts to reproductive success are expected.

Any Project activities that result in the loss or degradation to habitat for least Bell's vireo and other neo-tropical migrants would be considered adverse. To reduce impacts to least Bell's vireo and other neo-tropical migrants, PWD would implement SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat) which includes protocol surveys of suitable habitat, avoidance of any active nests, and monitoring of nest buffers. In addition, general SPC's including SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would further reduce impacts to this species, if present.

SPCs Applicable to Impact BIO-8

SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

To reduce or avoid impacts to least Bell's vireo and other neo-tropical migrants, PWD would implement SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat), which includes protocol surveys of suitable habitat, avoidance of any active nests, and monitoring of nest buffers. In addition, general SPCs including SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would further reduce impacts to this species if present. Implementation of these measures would ensure impacts remain less than significant (Class III).

Impact BIO-9: The Project would disturb Swainson's hawks.

Swainson's hawks nest in areas such as riparian woodlands, roadside trees, trees along field borders, and the edges of remnant oak woodlands. In the Antelope Valley, they are found in Joshua trees and in large non-native trees that border agricultural fields. There are no known records of this species within the vicinity of the Reservoir; however, migratory and foraging birds may pass through the canyons. Aspen biologists noted one adult Swainson's hawk foraging in a field north of the Los Angeles World Airports' Palmdale Regional Airport and another bird perched in a tree at 90th Street East in September 2009, over 5 miles north of the sediment disposal site. The closest known nesting sites are over 10 miles away north of Alpine butte (CDFW, 2014).

Swainson's hawk has not been detected at the Reservoir or sediment disposal sites. This species is not expected to forage at the Reservoir, although it has a moderate potential to forage at the sediment disposal sites. Nesting is also not expected at the Reservoir and is unlikely to occur at the sediment disposal sites. Direct impacts to Swainson's hawk, if present, would include disruption of foraging activity due to increased dust, noise, and human presence associated with the placement of fill or loss of habitat at the sediment disposal site. Indirect impacts include a reduction in habitat suitability due to the establishment of noxious weeds. Operational impacts are not expected but could occur if the species nests in adjacent habitat.

Because annual sediment removal activities would occur for many years and this species is known from the Antelope Valley, it is not possible to predict what use may occur at the debris disposal site in the future. Project activities that cause Swainson's hawks to abandon their nests or otherwise fail to reproduce would be considered an adverse impact. To reduce or avoid impacts to this species PWD would implement SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks), which includes a pre-construction survey at the sediment disposal site on 47th Street East prior to land disturbance and the establishment of buffers to avoid nesting birds if detected. The loss of foraging habitat would be offset through SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities). The implementation of SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would reduce impacts from the spread of weeds and fugitive dust.

SPCs Applicable to Impact BIO-9

SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's Hawks)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

Swainson's hawk has not been detected at the Reservoir or sediment disposal site. This species is not expected to forage at the Reservoir and has a moderate potential to forage at the sediment disposal site. Because annual sediment removal activities would occur for many years and this species is known from the Antelope Valley, it is possible that this species may be present in the future. SPCs have been incorporated into the Project to ensure activities will not have significant impacts associated with abandonment of Swainson's hawk nests or failed reproductive success. To reduce or avoid impacts to this species, PWD would implement SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks), which includes a pre-construction survey at the sediment disposal site on 47th Street East prior to land disturbance and the establishment of buffers to avoid nesting birds if detected. The loss of foraging habitat would be offset through SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities). The implementation of SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would reduce impacts from the spread of weeds and fugitive dust. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Impact BIO-10: The Project would result in disturbance to Bald or Golden Eagles.

Bald eagle is State-listed as endangered and is a Forest Service Sensitive Species that appears to be a routine winter visitor to the Reservoir. Golden eagles are fully State protected and may forage over the Project area. Bald and golden eagles are also protected under the federal Bald and Golden Eagle Protection Act (BGEPA). Golden eagles have not been observed but could forage in undisturbed habitat adjacent to the Reservoir or at the sediment disposal site at 47th Street East. Eagles could also nest on large trees near the reservoir but may be precluded from this activity due to ongoing human disturbance and use of the Reservoir. Human intrusions near golden eagle nest sites have resulted in nest abandonment; high nestling mortality when young go unattended due to altered behavior by the parent birds; premature fledging; and ejection of eggs or young from the nest (Pagel et al., 2010). Other protected raptors including peregrine falcons may also periodically forage in the Reservoir.

The Project must be in compliance with the BGEPA and will include measures designed to avoid impacts to reproductive success. Direct impacts if present would include temporary disturbance due to noise and human presence associated with sediment removal activities or the placement of fill at the sediment disposal site. Golden and bald eagles are not expected to nest at the Reservoir at this time. Indirect impacts include the loss of habitat due to the establishment of noxious weeds and from the placement of fill at the sediment disposal site at 47th Street East. Under the BGEPA, nest abandonment or decreased golden eagle reproductive success caused by substantial interference with normal breeding, feeding, or sheltering behavior, would constitute "take." Impacts that result in the disruption of breeding or foraging would be considered an adverse impact.

Sediment removal activities are not expected to substantially alter the use of the Reservoir by bald or golden eagles. Golden eagles may forage in the Project area at any time of year but have not been recorded at the Reservoir, while bald eagles appear to be only a periodic winter visitor. To reduce impacts to sensitive wildlife and maximize use of the water reserves in the Reservoir, the majority of

sediment removal activities would occur between late summer and early winter when stream flows would fill the Reservoir and preclude sediment removal activities. Bald eagles are not typically found at the Reservoir during this period. Bald eagles would retain access to the site during the winter and would be able to forage on fish and other prey. In addition, the removal of invasive fish from Littlerock Reservoir would create a beneficial effect on golden and bald eagles by preventing the exposure of bird species to elevated levels of contaminants.

The placement of fill at the 47th Street East sediment disposal location would remove up to approximately 5 acres of potential foraging habitat that could be used by golden eagles. To reduce this impact, and to avoid other impacts to bald and golden eagles from the Project, PWD would implement SPC BIO-4, SPC BIO-8, SPC BIO-9, SPC BIO-1a, and SPC BIO-2. SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) includes pre-construction surveys for nesting birds and the establishment of buffers if nesting birds are detected. Implementation of SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat) and SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks) would increase the potential to detect any nesting raptors in the Project area. The loss of foraging habitat would be offset through SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities). The implementation of SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would reduce impacts from the spread of weeds and fugitive dust.

SPCs Applicable to Impact BIO-10

SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds)

SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat)

SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

To reduce or avoid impacts to bald and golden eagles, PWD would implement SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) which includes pre-construction surveys for nesting birds and the establishment of buffers to avoid nesting birds if detected. Implementation of SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat) and SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks) would increase the potential to detect any nesting raptors in the Project area. The loss of foraging habitat would be offset through SPC BIO-1a (Restoration/Compensation for Impacts to Native Vegetation Communities). The implementation of SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would reduce impacts from the spread of weeds and fugitive dust. Implementation of these SPCs would ensure impacts to golden and bald eagles would remain less than significant (Class III).

Threatened, Endangered, or Fully Protected Mammals

Protocol surveys for Mohave ground squirrel were conducted at the sediment disposal site and evidence of this species was not observed (see Section C.3.1.5). Based on the known distribution of this species in

the region, the habitat conditions at the Project site, and the level of ongoing human use, it was determined that the sediment disposal site does not provide suitable habitat for Mohave ground squirrel.

Impact BIO-11: The Project would result in disturbance or loss of habitat for the ringtail.

Ringtail, a fully protected species in California, has the potential to occur in chaparral and riparian habitat associated with Little Rock Creek. Although not observed during several years of surveys this species is known from the San Gabriel Mountains. Ringtails are similar to raccoons in that they are often found within 0.6 mile (1 kilometer) of a permanent water source (Zeiner et al., 1990b).

Direct impacts from the construction of the grade control structure, sediment removal, and road repair activities would include mortality of individual ringtail or disturbance of ringtail maternity dens during the pup-rearing season (May 1 to September 1). Construction in riparian areas could also disturb denning ringtails if present. Dens may be in a hollow tree, a rock pile, a crevice in a cliff, or in abandoned burrows or woodrat nests (Zeiner et al., 1990b). Ringtails change dens frequently and an individual rarely spends more than three days in the same shelter. However, females with young remain in the same den for 10 to 20 days after giving birth. After that time dens may be changed daily (Poglayen-Neuwall and Toweill, 1988). Construction noise, dust, human presence, or ground disturbance could result in the abandonment of these den sites or result in mortality of juvenile animals. Indirect impacts to ringtail could include the spread of noxious weeds that degrade habitat quality, degradation of water quality due to siltation, and alteration of soils. Operational impacts would include disturbance to ringtail dens, the spread of noxious weeds, and disturbance from annual sediment removal activities or repairs to PWD access road below the dam.

The degradation of riparian areas has been identified by the Forest Service as a potential threat to the species on NFS lands (Stephenson and Calcarone, 1999). However, the total area of riparian habitat affected by the Project is low and it is not likely to make this species highly vulnerable to adverse effects from sediment removal activities. Ringtails that den in some of the large riparian trees that remain in the Reservoir would be affected; however, sediment removal activities of the grade control structure would primarily occur outside of the denning season for this species. With the exception of the denning period, this species is highly mobile and may leave the work area undetected. However, as this species is primarily nocturnal (although this species has been observed during the day in remote canyons) there is some potential to disturb denning or resting animals. If present impacts to this species would be considered adverse.

To reduce impacts to this species PWD would implement SPC BIO-11 (Conduct Focused Surveys for Ringtail and Avoid denning Areas) that includes preconstruction surveys to evaluate the potential presence of this species in or adjacent to the proposed work area. If present, work would be redirected to adjacent areas. In addition, SPC BIO-1a (Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would reduce impacts to this species from the loss to riparian habitat, educate workers regarding sensitive wildlife, reduce impacts from the spread of weeds, and limit fugitive dust in riparian habitats.

SPCs Applicable to Impact BIO-11

SPC BIO-11 (Conduct Focused Surveys for Ringtail and Avoid denning Areas)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

This is a California fully protected species and direct loss of this species is prohibited. To reduce or avoid impacts to this species, PWD would implement SPC BIO-11 (Conduct Focused Surveys for Ringtail and Avoid denning Areas) which includes preconstruction surveys to evaluate the potential presence of this species in or adjacent to the proposed work area. If present, work would be redirected to adjacent areas. In addition, SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would reduce impacts to this species from the loss to riparian habitat, educate workers regarding sensitive wildlife, reduce impacts from the spread of weeds, and limit fugitive dust in riparian habitats. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW, Forest Service, or USFWS (Criterion BIO3)

Special-status Plants

Approximately 24 special-status plant taxa have the potential to occur in the Project area. Figure C.3-10 illustrates the known locations of special-status plants occurring in or near the Study Area (CDFW, 2015). Three special-status plants, Johnston's monkeyflower (CRPC 4.3), short-joint beavertail (CRPR 1.B/FSS), and Lemmon's syntrichopappus (CRPR 4.S/FSW), were detected within the Vegetation Study Area during botanical surveys conducted from 2010 to 2014. None of these plants were detected in the Project area. Table C.3-4 lists the sensitive plant species that have the potential to occur in the Vegetation Study Area.

Impact BIO-12: The Project would result in the loss of candidate, Forest Service Sensitive, or special-status plant species.

Direct, indirect, and operational impacts to special-status plant species would be the same as described for listed plant species (Impact BIO-5) and may occur in a variety of ways, including the direct removal of plants during the construction of the grade control structure, sediment removal or road repair activities, or the placement of fill at the disposal site. Indirect impacts may include the invasion of weedy invasive and dust from grading or from trucks along Cheseboro Road and the other designated haul routes. Rare plants may also be disturbed from annual sediment removal activities, from repairs to PWD access road below the dam, or from weed management activities that include manual treatments and the use of herbicides. If present, the loss of sensitive plants would be considered an adverse impact.

Rare plants have not been found and are not expected to be present in the Reservoir. Based on surveys the most likely area to support rare plants would be in the juniper woodland habitat on the sediment disposal site at 47th Street East. Although not observed, sensitive plant species including pygmy poppy (*Canbya candida*) and Mojave paintbrush (*Castilleja plagiotoma*) CRPR 4.3 and Forest Service Sensitive species could be present. Although rare plants were detected in only a few locations, there is a potential

for some species to occur in areas that have not been subject to intense focused surveys (i.e., the 47th Street sediment disposal area) or may have failed to germinate even though plant expression on the sediment removal site was adequate in 2014 despite the poor rain year. If any of these species are encountered during pre-construction focused surveys, all individuals or populations within Project disturbance areas would be marked and avoided to the maximum extent possible. However, it is possible that some sensitive plants would be subject to Project disturbance.

Typically, impacts to a small number of non-State- or federally listed special-status plants (i.e., impacts to a few individuals) or impacts to a population where loss of the population would not negatively affect the range of the special-status plant species are not typically considered adverse. However, if Project activities result in the loss of more than ten percent of the known individuals within the Forest Service Sensitive, and/or special-status plant species (list 1.B or list 2 only) occurrence to be impacted, PWD shall preserve existing off-site occupied habitat that is not already part of the public lands in perpetuity at a 2:1 ratio (habitat preserved: habitat impacted).

To reduce impacts to sensitive plant species, PWD would implement SPC BIO-5 (Conduct Preconstruction Surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Forest Service Sensitive Plants and Avoid Any Located Occurrences of Listed Plants). The implementation of SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) and SPC BIO-1b (Worker Environmental Awareness Program) would further reduce impacts to sensitive plants by limiting work to previously surveyed and historically disturbed areas (i.e., the Reservoir) and using best management practices. Indirect effects on listed plants from the spread of invasive weeds would be minimized by implementation of SPC BIO-2 (Prepare and Implement a Weed Control Plan). This measure would prevent or reduce the potential spread of noxious weeds, control existing weed populations, and restore native habitats as required by Forest Service Manual 2080. SPC AQ-2 (Fugitive Dust Controls) and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would limit fugitive dust impacts to plant species.

SPCs Applicable to Impact BIO-12

SPC BIO-5 (Conduct Preconstruction Surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Forest Service Sensitive Plants and Avoid Any Located Occurrences of Listed Plants)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

PWD has incorporated SPC BIO-5 (Conduct Preconstruction Surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Forest Service Sensitive Plants and Avoid Any Located Occurrences of Listed Plants) into the Project to reduce impacts to sensitive plant species. SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) and SPC BIO-1b (Worker Environmental Awareness Program) would further reduce impacts to sensitive plants by limiting work to previously surveyed and historically disturbed areas (i.e., the Reservoir) and using best management practices. Indirect effects on special-status plants from the spread of invasive weeds

would be minimized by implementation of SPC BIO-2 (Prepare and Implement a Weed Control Plan). This measure would prevent or reduce the potential spread of noxious weeds, control existing weed populations, and restore native habitats as required by Forest Service Manual 2080. SPC AQ-2 (Fugitive Dust Controls) and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would limit fugitive dust impacts. The implementation of these SPCs would ensure impacts to sensitive plants remain less than significant (Class III).

Special Status Invertebrates

Special-status invertebrates were not detected; however, portions of the Study Area have the potential to support shoulderband snails. Shoulderband snails are a group of pulmonate (air-breathing) snails that can occur in areas with suitable micro-habitat such as rock or debris piles, dead vegetation, or small drainages where soil moisture persists. Although there are no known records for Trask shoulderband snail (*Helminthoglypta traskii*), a California Special Animal, this species is known from the region. San Emigdio blue butterfly, a Forest Sensitive Species, is not expected to occur in the Project area but may be associated with salt bush along the margins of Little Rock Creek in downstream areas. This species is known from the Mojave River in Victorville.

Impact BIO-13: The Project could result in the loss of Shoulderband Snails or San Emigdio Blue Butterfly.

Sensitive invertebrates are not expected to occur in the Reservoir, but may be associated with adjacent riparian and upland communities that provide suitable microhabitat conditions. If present, direct impacts would include loss or mortality from construction, sediment removal, or road repair activities that crush individuals or alter microhabitat conditions to the degree the species can no longer survive (i.e., removal of leaf litter). Impacts to butterflies would most likely result from vehicle strikes. Indirect and operational impacts could include the spread or colonization of weeds, weed management, fugitive dust, and the alteration of hydrology or the disruption of flows to off-site areas at the sediment disposal sites. Impacts to these species would be considered adverse.

To reduce or avoid impacts to these species, PWD would implement SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds). These SPCs include the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. Implementation of these SPCs provide for protection by educating workers to avoid sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. The SPCs include directives that educate workers regarding reduced vehicle speeds and housekeeping activities that reduce conflicts with native species.

SPCs Applicable to Impact: BIO-13

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

Trask shoulderband snail and San Emigdio blue butterfly have not been detected in the Project area. While it is possible these species occur in adjacent habitat, impacts would be reduced or avoided through implementation of the following SPCs: SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds). These SPCs include the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. Implementation of these SPCs provide for protection by educating workers to avoid sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. The SPCs include directives that educate workers regarding reduced vehicle speeds and housekeeping activities that reduce conflicts with native species. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Special-Status Reptiles and Amphibians

Coast horned lizard, a CDFW Species of Special Concern and coastal whiptail, a CDFW Special Animal, and silvery legless lizard, a CDFW Species of Special Concern and Forest Service Sensitive Species, were observed near the dam. Southwestern pond turtle and two-striped garter snake, CDFW Species of Special Concern and Forest Service Sensitive Species, were observed within aquatic habitat above and below the dam. In addition, the Project area provides habitat for a variety of special-status reptiles and amphibians.

Impact BIO-14: The Project could result in mortality or injury to southwestern pond turtles or a disruption of nesting habitat.

Southwestern pond turtles have been observed at the Reservoir near Rocky Point and below the dam. The pond turtle is normally found in and along riparian areas, although gravid females have been reported to nest more than 1,300 feet away from the nearest aquatic habitat (Holland, 1994). Pond turtles may also make overland movements up to one mile between areas of aquatic habitat (Bury, 1972 in Ernst et al., 1994). The preferred habitat for these turtles includes ponds or slow-moving water with numerous basking sites (logs, rocks, etc.), food sources (plants, aquatic invertebrates, and carrion), and few predators (raccoons, introduced fishes, and bullfrogs). Juvenile and adult turtles are commonly seen basking in the sun at appropriate sites, although they are extremely wary animals and often dive into the water at any perception of danger.

Direct effects to southwestern pond turtle may occur as a result of mechanical crushing; loss of nesting, breeding or basking sites; and human trampling. Disturbance would be associated with the removal of vegetation and construction of the grade control structure. Disruption of basking activity and potential impacts to southwestern pond turtles may result from construction activities, if pond turtles are present near the proposed construction site. To date, pond turtles have rarely been seen and when observed were noted at the upper margin of the Reservoir. It is possible they breed in the Reservoir; however, young turtles would fall prey to bass and other fish.

Direct impacts to southwestern pond turtles could also result from temporary impacts to water quality, fugitive dust, temporary loss of upland nesting sites and foraging habitat, disruption of breeding activity, or disturbance of basking sites. Juvenile southwestern pond turtles typically move from nesting sites in adjacent upland or riparian areas to the stream in the spring (Buskirk, 1992). Hatchlings are very small, often less than one inch, and may be inadvertently trampled during Project construction. In addition,

access to zooplankton, an important hatchling food source, may be disrupted if water quality were to be severely degraded by the Project.

Indirect impacts to southwestern pond turtle would include alteration of habitat that precludes pond turtle use, degradation of water quality over time due to siltation and sedimentation, and the spread of noxious weeds. Operational impacts include risk of mortality by vehicles and disturbance during annual sediment removal activities or repairs to PWD access road below the dam.

The greatest potential for injury or mortality to southwestern pond turtles as a result of Project activities is the damage or destruction of nesting areas. Since southwestern pond turtles often nest communally, damage or destruction of a nesting area could result in injury or mortality to a large number of incubating eggs or hatchling turtles and could disrupt egg-laying activities of adult female turtles. Sediment removal activities would be limited to dry portions of the Reservoir that were previously inundated. In addition, sediment removal activities and the construction of the grade control structure would commence in late summer after water surface elevations have been reduced in the Reservoir. Construction of the grade control structure and sediment removal activities would not be conducted in ponded or flowing water. Pond turtles or their eggs may be present in vegetated areas subject to clearing; however these areas are seasonally inundated and pond turtles that place eggs in these areas would be lost. Nonetheless any impacts to pond turtles would be considered adverse.

To reduce impacts to pond turtles, PWD would implement SPC BIO-14 (Conduct Surveys for Southwestern Pond Turtle and Implement Monitoring, Avoidance, and Minimization Measures) which includes clearance surveys for southwestern pond turtles prior to vegetation or sediment removal, relocation of stranded or displaced animals, and construction monitoring. SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts by including the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education on how to identify pond turtles, and the control of invasive weeds. Implementation of these SPCs would provide for protection of pond turtles by educating workers to avoid sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat.

SPCs Applicable to Impact BIO-14

SPC BIO-14 (Conduct Surveys for Southwestern Pond Turtle and Implement Monitoring, Avoidance, and Minimization Measures)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

To reduce impacts to pond turtles, PWD would implement SPC BIO-14 (Conduct Surveys for Southwestern Pond Turtle and Implement Monitoring, Avoidance, and Minimization Measures) which includes clearance surveys for southwestern pond turtles prior to vegetation or sediment removal, relocation of stranded or displaced animals, and construction monitoring. SPC BIO-1a (Provide

Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts through acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. Implementation of these measures provide for protection by educating workers to avoid sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Impact BIO-15: The Project could result in injury or mortality for two-striped garter snakes.

The two-striped garter snake is highly aquatic but may move considerable distances into upland habitats, even where permanent water is lacking. Two-striped garter snakes have been observed in riparian, freshwater marsh, coastal sage scrub, chaparral, oak woodland, and grassland habitats. Rathburn et al. (1993) found that these snakes tend to occupy streamside sites during the summer and switch to nearby upland habitats during the winter. Two-striped garter snakes were observed in Little Rock Creek above and below the dam. This species is not expected to occur on the sediment disposal sites.

Direct impacts due to construction activities include mortality or injury of individual two-striped garter snakes as a result of mechanical crushing; loss of nesting, breeding, or basking sites; fugitive dust; and human trampling. Other direct effects to these species include degradation of water quality through siltation caused by vehicles using wet ford stream crossings and removal of vegetation. Indirect effects include compaction of soils and introduction of exotic plant species. Operational impacts include risk of mortality by vehicles and disturbance on PWD access road below the dam or during annual sediment removal activities.

Project effects to this species would be similar to southwestern pond turtle and would be considered adverse. By design, the Project would limit work to dry areas of the Reservoir and stream channel. This would reduce the potential for direct effects to this species. To reduce effects of the Project on two-striped garter snakes PWD would implement SPC BIO-15 (Conduct Surveys for Two-Striped Garter Snakes and Implement Monitoring, Avoidance, and Minimization Measures), which includes clearance surveys for two-striped garter snakes prior to vegetation or sediment removal, relocation of stranded or displaced animals, and construction monitoring. SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts by including the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. Implementation of these SPCs would provide for protection by educating workers to avoid sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat.

SPCs Applicable to Impact BIO-15

SPC BIO-15 (Conduct Surveys for Two-Striped Garter Snakes and Implement Monitoring, Avoidance, and Minimization Measures)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

To reduce impacts to two-striped garter snakes, PWD would implement SPC BIO-15 (Conduct Surveys for Two-Striped Garter Snakes and Implement Monitoring, Avoidance, and Minimization Measures) which includes clearance surveys for southwestern pond turtles prior to vegetation or sediment removal, relocation of stranded or displaced animals, and construction monitoring. SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts by including the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. Implementation of these measures provide for protection by educating workers to avoid sensitive species and their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. Implementation of these measures ensures that potential impacts would remain less than significant (Class III).

Impact BIO-16: The Project could result in injury or mortality for Coast Range newts.

The Coast Range newt requires water for breeding, but uses adjacent upland habitat extensively. It is often found where water sources dry up for the summer, and during moist conditions, can be found beneath logs, boards, rocks, and in rodent burrows. This species can also be found in drier habitats such as oak forests, chaparral, and rolling grasslands. A permanent water source is not necessary as this species needs water only during breeding. In areas where newts utilize streams, they can be found in slow-moving areas and pools. The range of the Coast Range newt within southern California is highly fragmented; however, Coast range newts have been identified on the ANF.

This species has not been detected in the Project area but may occur in Little Rock Creek and in many of the perennial or nearly perennial aquatic habitats on the south slopes of the San Gabriel Mountains. The primary threats to this species on NFS lands include predatory non-native species, maintenance of aquatic stream flows, water quality, and illegal collecting. Coast Range newts are expected to have a low potential to occur in the Reservoir due to the presence of predatory fish. Coast Range newts are not expected to occur at the proposed 47th Street sediment disposal site.

Direct impacts to Coast Range newts include mortality or injury of individual animals as a result of mechanical crushing; loss of breeding sites; fugitive dust; and human trampling. Other direct effects to these species include degradation of water quality through siltation caused by vehicles using wet ford stream crossings; and removal of vegetation. Indirect effects include compaction of soils and introduction of exotic plant species. Operational impacts include risk of mortality by vehicles and disturbance on PWD access road below the dam or during annual sediment removal activities. Seasonal fluctuations in the water surface elevations could also strand egg masses of juvenile newts.

Project effects to this species would be similar to reptiles and amphibians that rely on aquatic areas to support their life history and would be considered adverse if they occur. By design, the Project would limit work to dry areas of the Reservoir and stream channel. This would reduce the potential for direct effects to this species. To reduce effects of the Project, PWD would implement SPC BIO-16 (Conduct Surveys for Coast Range Newts and Implement Monitoring, Avoidance, and Minimization Measures),

which includes clearance surveys for Coast Range newts prior to vegetation or sediment removal, relocation of stranded or displaced animals, and construction monitoring. SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts through the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels), SPC WQ-1 (Prepare Spill Response Plan), and SPC WQ-2 (Prepare a Storm Water Pollution Prevention Plan [SWPPP]) would limit construction in wetted areas and reduce the potential for hazardous spills into waterways. Implementation of these SPCs would protect Coast Range newts by educating workers to avoid sensitive species and their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. Seasonal surveys conducted for arroyo toads (SPC BIO-6c [Seasonal Surveys During Water Deliveries]) along the margins of the Reservoir prior to water deliveries would reduce the potential for standing of egg masses.

SPCs Applicable to Impact BIO-16

SPC BIO-16 (Conduct Surveys for Coast Range Newts and Implement Monitoring, Avoidance, and Minimization Measures)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels)

SPC WQ-1 (Prepare Spill Response Plan)

SPC WQ-2 (Prepare a Storm Water Pollution Prevention Plan [SWPPP])

CEQA Significance Conclusion

Project activities that result in the loss of coast range newts would be considered a significant impact. To reduce effects of the Project, PWD would implement SPC BIO-16 (Conduct Surveys for Coast Range Newts and Implement Monitoring, Avoidance, and Minimization Measures). This SPC includes clearance surveys for Coast Range newts prior to vegetation or sediment removal, relocation of stranded or displaced animals, and construction monitoring. SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts by including the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels) and SPC WQ-1 (Prepare Spill Response Plan) would limit construction in wetted areas and reduce the potential for hazardous spills into waterways. Implementation of these SPCs would protect Coast Range newts by educating workers to avoid sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. Seasonal surveys conducted for arroyo toads (SPC BIO-6c [Seasonal Surveys During Water Deliveries]) along the margins of the Reservoir prior to water deliveries would reduce the potential for standing of egg masses. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Impact BIO-17: The Project could result in injury or mortality of terrestrial California Species of Special Concern and Forest Service Sensitive amphibian and reptile species.

Several non-listed special-status reptiles and amphibians (terrestrial herpetofauna) could be affected by the Project. These include the following terrestrial California Species of Special Concern and Forest Service Sensitive species:

- | | |
|----------------------------|-------------------------------------|
| ■ San Diego horned lizard | ■ San Bernardino ringneck snake |
| ■ Silvery legless lizard | ■ San Bernardino mountain kingsnake |
| ■ Orange-throated whiptail | ■ Coast patch-nosed snake |
| ■ Coastal rosy boa | |

Several of these species, including San Diego horned lizard, silvery legless lizard, San Bernardino ringneck snake, and orange-throated whiptail were detected near the reservoir. Given the ecology of these species and cryptic nature, it is likely that some or all of the species identified above may occur in or near the Project area. Special-status terrestrial herpetofauna potentially present in the Project area would be subject to similar types of impacts. Direct impacts include being hit by vehicles on access roads, mechanical crushing during construction of the grade control structure, or the placement of fill at the 47th Street East sediment disposal site. Other impacts include fugitive dust; and general disturbance due to increased human activity. Project implementation may also result in permanent loss of habitat at the sediment disposal site. Special-status terrestrial herpetofauna could be injured or killed during ground-disturbing Project activities in undeveloped upland habitats and in some developed areas throughout the Project including staging areas near the Reservoir. Indirect impacts to these species include compaction of soils and the introduction of exotic plant species. Operational impacts include risk of mortality by vehicles and disturbance on access roads during annual sediment removal activities or during repairs to PWD access road below the dam.

Direct loss of these species would be considered an adverse impact. To reduce effects of the Project, PWD would implement SPC BIO-17 (Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures). This SPC includes clearance surveys for terrestrial herpetofauna prior to vegetation or sediment removal, relocation of stranded or displaced animals, and construction monitoring. SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts through the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels), SPC WQ-1 (Prepare Spill Response Plan), and SPC WQ-2 (Prepare a Storm Water Pollution Prevention Plan [SWPPP]) would limit construction in wetted areas and reduce the potential for hazardous spills into waterways. Implementation of these SPCs would protect terrestrial herpetofauna by educating workers to avoid sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat.

SPCs Applicable to Impact BIO-17

SPC BIO-17 (Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels)

SPC WQ-1 (Prepare Spill Response Plan)

SPC WQ-2 (Prepare a Storm Water Pollution Prevention Plan [SWPPP])

CEQA Significance Conclusion

Direct loss of these species would be considered a significant impact. To reduce effects of the Project PWD would implement SPC BIO-17 (Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures). This SPC includes clearance surveys for terrestrial herpetofauna prior to vegetation or sediment removal, relocation of stranded or displaced animals, and construction monitoring. SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts by including the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels) and SPC WQ-1 (Prepare Spill Response Plan) would limit construction in wetted areas and reduce the potential for hazardous spills into waterways. Implementation of these SPCs would protect terrestrial herpetofauna by educating workers to avoid sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Special-Status Birds

The Project area supports a variety of special-status birds. Impacts to special-status birds would be similar to those described for common wildlife (see Impact B-3). Impacts to nesting birds are described in Impact BIO-4. Non-listed, special-status birds are discussed in greater detail below.

Impact BIO-18: The Project would result in the loss of suitable burrowing owl habitat.

Burrowing owls, a CDFW Species of Special Concern, are known from the Antelope Valley and may occur at the 47th Street East sediment disposal site. Protocol surveys for this species did not detect signs of this species; however, owls may occupy a suitable site at any time. Burrowing owls are not expected to occur at the Reservoir. This species is not known to nest on NFS lands, although burrowing owls may occur along the lower margins of the forests where they come in contact with desert slopes and valleys that abut NFS lands. Management of NFS lands does not significantly influence the conservation status of this species given its range and habitat requirements (Stephenson and Calcarone, 1999).

Direct impacts to burrowing owls as a result of construction activities for the Project could include the crushing of burrows, removal or disturbance of vegetation, increased noise levels from heavy equipment, increased human presence, and exposure to fugitive dust. Indirect impacts could include the loss of habitat due to the colonization of noxious weeds. Operational impacts include disturbance on access roads during annual sediment removal activities.

Burrowing owls are not expected to be adversely affected at the Reservoir or during annual sediment removal activities. If burrowing owls are present at the sediment disposal site, the placement of fill could destroy occupied burrows or cause the owls to abandon burrows. However, SPCs have been incorporated into the proposed action to ensure construction during the breeding season does not result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. The loss of occupied burrowing owl habitat (habitat known to have been occupied by owls during the nesting season within the past 3 years) or reductions in the number of this rare species, directly or indirectly through nest abandonment or reproductive suppression, would constitute an adverse impact. Furthermore, raptors, including owls and their nests, are protected under both federal and State laws and regulations, including the Migratory Bird Treaty Act and California Fish and Game Code Section 3503.5.

To reduce or avoid these adverse effects, PWD would implement SPC BIO-18 (Conduct Protocol Surveys for Burrowing Owls). This SPC includes pre-construction surveys for burrowing owls at the sediment disposal site or any area supporting suitable habitat and the establishment of buffers if detected. Should the Project result in habitat loss for this species, PWD would acquire suitable habitat to replace lost territories. Implementation of SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds), SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat) and SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks) would increase the potential to detect burrowing owls in the Project area. The loss of foraging habitat would be further offset through SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities). SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts by including worker education and the control of invasive weeds. Implementation of these measures would protect burrowing owls by educating workers to avoid sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat.

SPCs Applicable to Impact BIO-18

SPC BIO-18 (Conduct Protocol Surveys for Burrowing Owls)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds)

SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat)

SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

The loss of occupied burrowing owls or their habitat would be considered a significant impact. Furthermore, raptors, including owls and their nests, are protected under both federal and State laws and regulations, including the Migratory Bird Treaty Act and California Fish and Game Code Section 3503.5. To reduce or avoid the effects of the Project, PWD would implement SPC BIO-18 (Conduct Surveys for Burrowing Owls and Implement Monitoring, Avoidance, and Minimization Measures). This

SPC includes pre-construction surveys for burrowing owls at the sediment disposal site or any area supporting suitable habitat and the establishment of buffers if detected. Should the Project result in habitat loss for this species, PWD would acquire suitable habitat to replace lost territories. Implementation of SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds), SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat) and SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks) would increase the potential to detect burrowing owls in the Project area. The loss of foraging habitat would be further offset through SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities). SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts by including worker education and the control of invasive weeds. Implementation of these SPCs would protect burrowing owls by educating workers to avoid sensitive species or their habitat, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Impact BIO-19: The Project could disturb Forest Service Sensitive or California Species of Special Concern birds.

A variety of birds considered sensitive by the Forest Service or CDFW were documented in the Project area (see Table C.3-5). These include Lawrence's goldfinch, Vaux's swift, Southern California rufous-crowned sparrow, summer tanager, and yellow warbler. Yellow warblers would be expected to breed in the area while Vaux's swift are typically associated with coniferous forests. While not observed, species including yellow-breasted chat (*Icteria virens*) may occur in riparian areas of Little Rock Creek, and gray vireo (*Vireo vicinior*) could occur in riparian areas or surrounding upland scrub habitats. Loggerhead shrike (*Lanius ludovicianus*) and Le Conte's thrasher (*Toxostoma lecontei*) could occur in or near juniper woodlands present at the 47th Street East sediment disposal site.

Direct, indirect, and operational impacts to nesting birds would be the same as described for common birds and raptors (see Impact BIO-4), southwestern willow flycatchers and least Bell's vireos (see Impact BIO-8), and burrowing owls (see Impact BIO-18). Direct impacts to nesting birds include ground-disturbing activities associated with construction of the grade control structure, sediment removal, road repair activities, increased noise levels from heavy equipment, increased human presence, and exposure to fugitive dust. Construction of the grade control structure during the breeding season has potential to impact breeding birds and reproductive success. Because sediment removal activities are scheduled to start after September 1, the potential for impacts to reproductive success is greatly reduced.

Indirect impacts to nesting birds include human disturbance, the spread of noxious weeds and disruption of breeding or foraging activity due to repairs to the access road or routine inspection of the Reservoir. Weed management could also affect nesting.

Project activities have potential to affect foraging and roosting birds if present during grade control construction, sediment removal, or access road repair. Birds and other wildlife may temporarily or permanently leave their territories to avoid construction activity, which could lead to reduced reproductive success and increased mortality. The loss of nesting birds would be considered adverse. Because of the potential for displacement of breeding birds and the abandonment of active nests, removal of vegetation during the breeding season will only be implemented if surveys have first been conducted to locate nesting birds.

Nesting birds are protected under federal and State laws and regulations, including the Migratory Bird Treaty Act and California Fish and Game Code Section 3503.5. To reduce effects of the Project on

nesting birds, PWD would implement SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds). This SPC includes pre-construction surveys for nesting birds and the establishment of buffers if detected. Implementation of SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat), SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's Hawks), and SPC BIO-18 (Conduct Protocol Surveys for Burrowing Owls) would increase the potential nesting birds in the Project area. The loss of foraging habitat would off-set through SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities). SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts by including worker education, and the control of invasive weeds and dust. Implementation of these SPCs would protect nesting birds by educating workers, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat.

SPCs Applicable to Impact BIO-19

SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds)

SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat)

SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks)

SPC BIO-18 (Conduct Protocol Surveys for Burrowing Owls)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

The loss of nesting birds would be considered a significant impact and could violate State and federal laws that protect migratory and resident birds. To reduce or avoid effects of the Project on nesting birds, PWD would implement SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds). This SPC includes pre-construction surveys for nesting birds and the establishment of buffers if detected. Implementation of SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat), SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's Hawks), and SPC BIO-18 (Conduct Surveys for Burrowing Owls and Implement Monitoring, Avoidance, and Minimization Measures) would increase the potential nesting birds in the Project area. The loss of foraging habitat would offset through SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities). SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts through worker education and the control of invasive weeds and dust. Implementation of these measures would protect nesting birds by educating workers, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Special-Status Mammals

The Project area supports a variety of special-status mammal species including several species of bats, small rodents, mid-size carnivores such as American badger, and Nelsons bighorn sheep. Some of the

species have widespread distributions such as the black-tailed jackrabbit; whereas other species including bats and pocket mice occur in very limited areas and are often reliant on specific habitat types, such as rocky canyons, large trees with cavities, caves, bridges, and tunnels for many species of bats. Nelsons bighorn sheep is a periodic visitor to the hills above the Reservoir.

Impacts to sensitive mammals would be similar to those described for common wildlife (see Impact B-4). Wide-ranging species such as black-tailed jackrabbit are not likely to be affected by the Project. These species are able to quickly egress an area and the short duration of construction at any single point would not result in adverse impacts to the species; however, other species may be affected by the Project. These are discussed in greater detail below.

Impact BIO-20: The Project could result in mortality of, and loss of habitat for, special-status bat species.

Sensitive bats detected at the Reservoir included the pallid bat, a CDFW Species of Special Concern and Forest Service Sensitive Species, and Yuma myotis, a CDFW Special Animal. Townsend's big-eared bat, western red bat, hoary bat, spotted bat, western mastiff bat, big free-tailed bat, long-legged myotis, and pocketed free-tailed bat are all California Species of Special Concern that have the potential to occur within the Project area. Pallid bat and Townsend's big-eared bat are also Forest Service Sensitive species. The Project area includes numerous locations that constitute suitable bat foraging and roosting habitat, including Little Rock Creek, the Reservoir, juniper woodland on the sediment disposal site, and in adjacent scrub communities. The presence of large trees with exfoliating bark (i.e., large willow and cottonwood trees, Joshua trees, and junipers), water delivery tunnels below the dam, rock outcroppings, mine shafts, and hollow trees, provide suitable habitat for day roosts and hibernaculum.

Bat life histories vary widely. Some species hibernate during winter, or migrate to warmer areas. During the breeding season, bats generally roost during the day, either alone or in communal roost sites, depending on species. Some species feed mainly over open water where insect production is especially high, but others forage over open shrublands. The decline of bat populations is often due to roost site disturbance, loss of foraging habitat, and loss of roost sites. Activities that have been documented to impact bats include livestock grazing, vegetation treatments, and water reclamation that could lead to loss of a water source or riparian habitat. Due to their sensitivity to human disturbance, roost protection is important for bats. Roost protection measures may include seasonal use restrictions or physical closures as necessary.

Direct impacts to bats include mortality or displacement of bats during ground-disturbing activities associated with construction of the grade control structure, sediment removal, road repair activities, increased noise levels from heavy equipment, human presence, and exposure to fugitive dust. Noise, vibration, and human activity could disrupt maternity roosts during the breeding season. Indirect effects could include increased traffic, dust, and human presence in the Project area that could result in bats abandoning their roosts or maternal colonies. For example, Townsend's big-eared bat is known to abandon young when disturbed. Bats that forage near the ground, such as the pallid bat, would also be subject to crushing or disturbance by vehicles driving at dusk, dawn, or during the night. The use of access roads during dusk and dawn could also disturb bats or result in vehicle strikes.

Implementation of the Project would not prevent bats from foraging in the Reservoir or result in the loss of known maternity sites or roosting trees. However, bats are known from the Reservoir and could be disturbed from Project activities. The loss or disturbance to special-status bats would be considered adverse. To reduce impacts to bats, PWD would implement SPC BIO-20 (Survey for Maternity Colonies or Hibernaculum for Roosting Bats). This SPC includes pre-construction surveys for roosting bats and the

avoidance of maternity colonies or hibernaculum. If maternity colonies are found, a construction buffer would be established and work diverted to another area. The loss of foraging habitat would offset through SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts by including worker education and the control of invasive weeds. Implementation of these SPCs would protect bats by educating workers, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat.

SPCs Applicable to Impact BIO-20

SPC BIO-20 (Survey for Maternity Colonies or Hibernaculum for Roosting Bats)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

Although bat roosts have not been confirmed at the reservoir or below the reservoir, there is potential for bats to use the dam tunnel and area trees and rock faces for roosting. Implementation of the Project would not prevent bats from foraging in the Reservoir or result in the loss of known maternity sites or roosting trees. However, bats are known from the Reservoir and could be disturbed from Project activities. To reduce impacts to bats, PWD would implement SPC BIO-20 (Survey for Maternity Colonies or Hibernaculum for Roosting Bats). This SPC includes pre-construction surveys for roosting bats and the avoidance of maternity colonies or hibernaculum. If maternity colonies are found, a construction buffer would be established and work diverted to another area. The loss of foraging habitat would be offset through SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds) would minimize impacts by including worker education and the control of invasive weeds. Implementation of these SPCs would protect bats by educating workers, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Impact BIO-21: The Project could result in mortality of, and loss of habitat for, special-status mammals.

Although not detected during surveys, the Project area may support a variety of small rodents including the Los Angeles pocket mouse, San Joaquin pocket mouse, pallid San Diego pocket mouse, and Southern grasshopper mouse. San Diego black-tailed jackrabbit may also occur in the region. These species are not expected to occur in the Reservoir but may be present in adjacent habitat, at the sediment disposal site, or along the proposed haul routes. The pallid San Diego pocket mouse has been found in pinyon-juniper woodland, desert scrub, rocky slopes, and agave-ocotillo habitat (Lackey, 1996). On desert slopes of the eastern San Gabriel Mountains, the species' distribution was closely correlated with the presence of yucca, particularly on dry, rocky southern slopes (Vaughan, 1954).

Direct impacts to these species would include mechanical crushing by vehicles and construction equipment, trampling, dust, and loss of habitat at the 47th Street East sediment disposal site. Construction disturbance can also result in the flushing of small animals from refugia which increases the predation risk for small rodents. Indirect impacts include alteration of soils, such as compaction that could preclude burrowing and the spread of exotic weeds.

These species are not expected to be subject to impacts from sediment removal activities and are likely distributed across the sediment disposal site in low densities. Nonetheless, the Project would remove or disturb vegetation and these animals would be subject to mortality from the placement of fill at this location. Impacts to these species would be considered adverse. To reduce impacts to small mammals PWD would implement SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds). These SPCs include the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. Implementation of these SPCs would provide for the protection of wildlife by educating workers on avoidance mechanisms, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. The SPCs include directives that educate workers regarding reduced vehicle speeds and housekeeping activities that reduce conflicts with native species.

SPCs Applicable to Impact BIO-21

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

The distribution of small mammals in the Project area is greatly influenced by the fluctuating water surface elevations on the Reservoir and sensitive mammals are not expected to be subject to impacts from sediment removal activities. Sensitive mammals are likely distributed across the sediment disposal site in low densities partly due to anthropogenic disturbance including OHV use. Nonetheless, the Project would remove or disturb vegetation and these animals would be subject to mortality from the placement of fill at this location. Impacts to these species would be considered significant. To reduce impacts to small mammals, PWD would implement SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds). These SPCs include the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. Implementation of these SPCs would provide for the protection of wildlife by educating workers on avoidance mechanisms, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. The SPCs include directives that educate workers regarding reduced vehicle speeds and housekeeping activities that reduce conflicts with native species. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Impact BIO-22: The Project could result in mortality of American badgers or desert kit fox.

American badgers and desert kit fox (a fully protected species under California Code of Regulations, Title 14, Section 460) were not detected in the Project area but may occur in drier, open habitats with friable soil anywhere within the Project area. Nonetheless, the Project would remove or disturb foraging habitat and these animals could be subject to adverse effects from the placement of fill at the 47th Street East sediment disposal site. Impacts to these species would be considered adverse.

Direct impacts to American badger and desert kit fox include mechanical crushing of individuals or burrows by vehicles and construction equipment, noise, dust, and loss of habitat. Indirect impacts include alteration of soils such as compaction that could preclude burrowing and the spread of exotic weeds. Operational impacts include risk of road kill on Cheseboro Road and other haul routes and the spread of noxious weeds.

To reduce impacts to American badger and desert kit fox PWD would implement SPC BIO-22 (Conduct Surveys for American Badger and Desert Kit Fox and Avoid During the Breeding Season). This SPC includes pre-construction surveys and avoidance of maternity dens and construction monitoring. If required for the placement of fill, PWD would passively relocate badgers out of the work area to reduce the potential for mortality. This includes monitoring and collapsing the dens once the animal leaves the site. However, badgers often retreat to burrows when alarmed and without active monitoring of a den it is difficult to determine the status of individual burrows. PWD would be required to avoid impacts to desert kit fox natal dens.

To reduce impacts, PWD would implement SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds). These SPCs include the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. Implementation of these measures provide for protection of American badgers and desert kit fox by educating workers on avoidance mechanisms, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat.

SPCs Applicable to Impact BIO-22

SPC BIO-22 (Conduct Surveys for American Badger and Desert Kit Fox and Avoid During the Breeding Season)

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

CEQA Significance Conclusion

Badgers and kit foxes are categorized as “fur-bearing mammals” (CDFG Code Section 4000). California Code of Regulations, Title 14, section 460, designates kit fox as “protected,” and they are protected by CDFG Game Code (section 86) prohibition against take, defined as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” American badger is also considered a Species of Special Concern. Direct and indirect impacts to American badgers and desert kit fox would be significant

if present. To reduce impacts to small mammals, PWD would implement SPC BIO-22 (Conduct Surveys for American Badger and Desert Kit Fox and Avoid During the Breeding Season). This SPC includes pre-construction surveys and avoidance of maternity dens and construction monitoring. If required for the placement of fill, PWD would passively relocate badgers out of the work area to reduce the potential for mortality. PWD would avoid impacts to desert kit fox natal dens. To reduce impacts, PWD would implement SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds). These SPCs include the acquisition of mitigation lands for habitat loss, the establishment of riparian vegetation, worker education, and the control of invasive weeds. Implementation of these SPCs provide for protection of American badgers and desert kit fox by educating workers on avoidance mechanisms, restoring temporarily disturbed areas after sediment removal activities, and acquiring off-site habitat. Implementation of these SPCs would ensure impacts remain less than significant (Class III).

Impact BIO-23: The Project would disturb Nelson's bighorn sheep.

Bighorn sheep are known from the local mountain ranges and are periodic visitors to Littlerock Canyon. Direct effects to bighorn sheep could include disturbance from construction activities, noise, and lighting. However, because of the distance to known herds, the Project is not expected to result in direct impacts from noise, dust, or human activity unless sheep move close to the Reservoir. During most summer months access to surface water remains in upstream portions of Little Rock Creek. The most likely risk to bighorn sheep would be increased road traffic. If present, the disruption of foraging or limiting sheep's access to water would be considered adverse impact.

The Project would not result in the loss of foraging habitat or disrupt inter-mountain movement for Nelson's bighorn sheep. While sheep may range far from mountainous areas, especially during intermountain movement, the Project is not expected to result in the loss of annual spring forage for this species or act as a barrier to movement. Sediment removal activities would take place in late summer after most spring plants have completed their bloom.

Indirect impacts to bighorn sheep could include the degradation of habitat from invasive weeds and risk of wildfires. Preventing access to watering sources is another potential effect. Operational impacts include the risk of road kill on Cheseboro Road.

To reduce impacts to Nelson's bighorn sheep, PWD would implement a series of measures including SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds). These SPCs provide for protection of Nelson's bighorn sheep by educating workers on avoidance mechanisms and restoring temporarily disturbed areas after sediment removal activities. The SPCs include directives that educate workers regarding reduced vehicle speeds and housekeeping activities that reduce conflicts with native species. In addition, SPC FIRE-1 (Curtailed Activities), SPC FIRE-2 (Preparation of a Fire Plan), and SPC FIRE-3 (Spark Arrester Requirements) would be implemented to minimize risk of wildfire from Project activities.

SPCs Applicable to Impact BIO-23

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

SPC FIRE-1 (Curtailed Activities)

SPC FIRE-2 (Preparation of a Fire Plan)

SPC FIRE-3 (Spark Arrester Requirements)

CEQA Significance Conclusion

Nelson's bighorn sheep are designated sensitive by the Forest Service and are protected by CDFW regulations. To reduce or avoid impacts to Nelson's bighorn sheep, PWD would implement a series of measures including SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), and SPC AQ-5 (Reduce Off-Road Vehicle Speeds). Implementation of these SPCs provide for protection of Nelson's bighorn sheep by educating workers on avoidance mechanisms and restoring temporarily disturbed areas after sediment removal activities. In addition, SPC FIRE-1 (Curtailed Activities), SPC FIRE-2 (Preparation of a Fire Plan), and SPC FIRE-3 (Spark Arrester Requirements) would be implemented to minimize risk of wildfire from Project activities.

The SPCs include directives that educate workers regarding reduced vehicle speeds and housekeeping activities that reduce conflicts with native species. Implementation of these SPCs would ensure that impacts remain less than significant (Class III).

Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (Criterion BIO4)

Impact BIO-24: The Project could result in the loss of wetland habitats.

The preliminary jurisdictional determination and delineation of waters report identified approximately 92.306 acres of federal non-wetland waters and 97.428 acres of State waters in the Project area (see Figure C.3-12). Federal wetland waters do not occur in the Reservoir or in Little Rock Creek.

Construction of the grade control structure and sediment removal activities would result in approximately 73.2 acres of temporary disturbance to State and federal non-wetland waters. Annual repairs to PWD access road below the dam would disturb approximately 0.006 acres of federal non-wetland waters and 0.028 acres of State waters. The placement of fill on the 47th Street East sediment disposal site would avoid direct impacts to all jurisdiction waters. As currently proposed, sediment would be stored on no more than 8 acres of the site (See Figure C.3-15). Construction of the grade control structure would result in permanent impacts to approximately 0.33 acres above grade. Soil cement bank protection would extend laterally from the primary structure, as well as along the west upstream bank, to protect adjacent side slopes. This soil cement structure plus adjacent bank protection would span approximately 250 to 476 feet of channel (bank to bank) with a maximum depth of approximately 56 feet underground. The subterranean portion of the structure would extend downstream approximately 112 feet at an approximately 2-to-1 slope (see Figures B-3 and B-4). Because the grade control structure and most of the adjacent bank protection would be constructed below grade, only the upper lip of the structure would be visible when the reservoir water level is lowered

(approximately 8 feet by 200 feet). Soil cement bank protection adjacent to the structure and on the west bank upstream of the structure would extend approximately 9 feet above the reservoir bed.

The importance of intermittent and ephemeral streams to wildlife in arid environments is well known (Levick et al., 2008). Ephemeral washes similar to those on the proposed sediment disposal site provide unique habitat that is distinct from the surrounding uplands providing more continuous vegetation cover and microtopographic diversity than the surrounding uplands. Ephemeral and intermittent streams in the arid west provide important habitat for wildlife and are responsible for much of the biotic diversity (Levick et al., 2008). They have higher moisture content and provide shade and cooler temperatures within the channel. In cases where the habitat is distinct in species composition, structure, or density, wash communities provide habitat values not available in the adjacent uplands. Riparian and wash dependent vegetation along desert washes drive food webs, provide seeds for regeneration, habitat for wildlife, access to water, and create cooler, more hospitable microclimatic conditions essential for a number of plant and animal species. Baxter (1988) noted that washes, because of their higher diversity plant communities, are probably important foraging locations for desert tortoise; in smaller washes, there is greater cover and diversity of spring annuals, providing important food sources.

Sediment removal activities would be considered temporary and would not substantially alter the functions of the Reservoir. At the completion of sediment removal activities, the Reservoir would fill with water for the season and continue to provide habitat for non-native fish and other aquatic resources. Habitat functions in much of the wash have been compromised by OHV use and riparian vegetation is limited to a few areas of the Reservoir. Nonetheless, impacts to these resources from the Project would be considered adverse. Permanent impacts from the placement of the grade control structure would be limited in scale and largely buried at the completion of construction which would allow for the annual recruitment of herbaceous vegetation above the structure in this area.

The small ephemeral washes present on the 47th Street East sediment disposal site appear to flow from at least one culvert under the California Aqueduct to off-site areas. PWD would avoid direct impacts to these features to maintain hydrology across the site.

Direct impacts to State and federal waters would include the removal of native riparian vegetation, the discharge of fill, degradation of water quality, and increased erosion and sediment transport. Indirect impacts could include alterations to the existing topographical and hydrological conditions and the introduction of non-native, invasive plant species. Operational impacts to wetland habitats would be similar to direct and indirect impacts and would primarily occur as a result of annual sediment removal activities or repairs to PWD access road below the dam. As required by law, PWD would comply with the regulations regarding conducting Project activities in water bodies under the jurisdiction of the State and federal government. Therefore, PWD would obtain required permits pursuant to Section 401 and 404 of the CWA and the State Porter-Cologne Act (see Appendix F for a 404(b)(1) Evaluation Summary) and CDFG Code 1605. On NFS lands, PWD would comply with the Forest Service requirements regarding Riparian Conservation Areas. There would be no net loss of wetlands from the implementation of the Project.

To reduce impacts to State and federal waters PWD would implement SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), SPC AQ-5 (Reduce Off-Road Vehicle Speeds), SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels), and SPC WQ-1 (Prepare Spill Response Plan). These measures include restoration, habitat acquisition, the avoidance of jurisdictional features on the sediment disposal site, worker training, and dust control. PWD would not conduct work in areas

supporting ponded or flowing water and would replace lost vegetation along the margin of the Reservoir at a ratio of 3 to 1. Impacts to juniper woodland habitat would be replaced through habitat acquisition at a ratio of 1.5 to 1. Compliance with State and federal regulations and the SPCs proposed by PWD would minimize impacts to State and federal waters.

SPCs Applicable to Impact BIO-24

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC AQ-2 (Fugitive Dust Controls)

SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels)

SPC WQ-1 (Prepare Spill Response Plan)

CEQA Significance Conclusion

Due to the importance of riparian and wash communities and its suitability to support special-status species, any loss of these habitats associated with the Project is significant. As required by law, PWD would comply with the regulations regarding conducting Project activities in water bodies under the jurisdiction of the State and federal government. Therefore, PWD would obtain required permits pursuant to Section 401 and 404 of the CWA and the State Porter-Cologne Act (see Appendix F for a 404(b)(1) Evaluation Summary) and CDFG Code 1605. On NFS lands, PWD would comply with the Forest Service requirements regarding Riparian Conservation Areas. To reduce impacts to State and federal waters, PWD would implement SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC AQ-2 (Fugitive Dust Controls), SPC AQ-5 (Reduce Off-Road Vehicle Speeds), SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels), and SPC WQ-1 (Prepare Spill Response Plan). These measures include restoration, habitat acquisition, the avoidance of jurisdictional features on the sediment disposal site, worker training, and dust control. PWD would not conduct work in areas supporting ponded or flowing water and would replace lost vegetation along the margin of the Reservoir at a ratio of 3 to 1. Impacts to juniper woodland habitat would be replaced through habitat acquisition at a ratio of 1.5 to 1. Compliance with State and federal regulations and the SPCs proposed by PWD would ensure impacts to State and federal remain less than significant (Class III).

Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Criterion BIO5)

Studies suggest that habitat fragmentation and isolation of natural areas ultimately results in the loss of native species within those communities (Soulé et al., 1988). The ability for wildlife to move freely among populations is important to long-term genetic variation and demography. Fragmentation and isolation of natural habitat may cause loss of native species diversity in fragmented habitats. In the short term, wildlife movement may also be important to an animal's ability to occupy home ranges, if a species range extends across a potential movement barrier. These considerations are especially important for rare, threatened, or endangered species, and wide-ranging species such as large mammals, which exist in low population densities. The Project area is located in the San Gabriel

Mountains which has been designated an essential connectivity area (Spencer et al., 2010). Littlerock dam is the only major physical obstacle in the area and precludes passage for aquatic species or wildlife with limited dispersal ability. Otherwise the Reservoir is surrounded by open natural lands with little to any physical barriers. The 47th Street east sediment disposal site is located in an area that has been subject to extensive development and does not appear to contribute to wildlife connectivity or movement for most species.

Direct impacts include the placement of physical structures such as the grade control structure at Rocky Point or the placement of fill at the 47th Street East sediment disposal area. Ground-disturbing activity including construction of the grade control structure or sediment removal activities and use of existing access roads would be expected to interfere with terrestrial wildlife movement during construction or sediment removal activities. The Project could also affect wildlife in adjacent habitats by interfering with movement patterns or causing animals to temporarily avoid areas adjacent to the construction zone. More mobile species such as birds and larger mammals would likely disperse into adjacent habitat areas during the clearing and sediment removal. Wildlife use of the area would be affected during these activities and from annual sediment removal activities.

Indirect impacts include human disturbance, colonization or expansion of invasive weeds, and vehicle traffic. Operational impacts would be the same as described for direct and indirect impacts.

Construction activities may temporarily limit terrestrial wildlife movement at the Reservoir; however, the broad geographic range and habitat that occurs in the region would remain available to wildlife. Wildlife would maintain access to the Reservoir during the morning and early evening as well as during nighttime hours. The Project would not substantially interfere with the movement of any native resident or migratory fish, reptile, or amphibian species. There are no listed reptiles or amphibians below the dam and sensitive amphibians that enter the Reservoir are considered lost through predation or from existing land uses. Existing barriers to movement currently limit movement in the Project area. Native and migratory fish are not present in this watershed and would not be affected by the Project.

There are no known bird or bat migratory corridors that would be directly impeded by the Project. Large concentrations of migrants are not known to utilize any specific portion of the Project site and Project activities are not expected to preclude use of the area. Migrating birds would have access to riparian communities above and below the dam during sediment removal activities.

Impact BIO-25: The Project would interfere with established wildlife migratory corridors.

Direct impacts include the placement of physical structures such as the grade control structure at Rocky Point or the placement of fill on approximately eight acres of the 47th Street East sediment disposal area. Ground-disturbing activity including construction of the grade control structure or sediment removal activities and use of existing access roads would be expected to interfere with terrestrial wildlife movement during construction or sediment removal activities. The Project could also affect wildlife in adjacent habitats by interfering with movement patterns or causing animals to temporarily avoid areas adjacent to the construction zone. More mobile species such as birds and larger mammals would likely disperse into adjacent habitat areas during the clearing and sediment removal. Wildlife use of the area would be affected during these activities and from annual sediment removal activities.

Indirect impacts include human disturbance, colonization or expansion of invasive weeds, and vehicle traffic. Operational impacts would be the same as described for direct and indirect impacts.

Construction activities may temporarily limit terrestrial wildlife movement at the Reservoir; however, the broad geographic range and habitat that occurs in the region would remain available to wildlife. Wild-

life would maintain access to the Reservoir during the morning and early evening as well as during nighttime hours. The Project would not substantially interfere with the movement of any native resident or migratory fish, reptile, or amphibian species. There are no listed reptiles or amphibians below the dam and sensitive amphibians that enter the Reservoir are considered lost through predation or from existing land uses. Existing barriers to movement currently limit movement in the Project area. Native and migratory fish are not present in this watershed and would not be affected by the Project.

There are no known bird or bat migratory corridors that would be directly impeded by the Project. Large concentrations of migrants are not known to utilize any specific portion of the Project site and Project activities are not expected to preclude use of the area. Migrating birds would have access to riparian communities above and below the dam during sediment removal activities.

CEQA Significance Conclusion

Construction activities may temporarily limit terrestrial wildlife movement at the Reservoir; however, the broad geographic range and habitat that occurs in the region would remain available to wildlife. Wildlife would maintain access to the Reservoir during the morning and early evening as well as during nighttime hours. The Project would not substantially interfere with the movement of any native resident or migratory fish, reptile, or amphibian species. There are no listed reptiles or amphibians below the dam. Existing barriers to movement currently limit movement in the Project area. Native and migratory fish are not present in this watershed and would not be affected by the Project.

There are no known bird or bat migratory corridors that would be directly impeded by the Project. Large concentrations of migrants are not known to utilize any specific portion of the Project site and Project activities are not expected to preclude use of the area. Migrating birds would have access to riparian communities above and below the dam during sediment removal activities. Although species would be disrupted during certain activities, impacts to migratory corridors from the Project would be less-than-significant (Class III).

Impact BIO-26: The Project would result in effects to Management Indicator Species.

The 2005 Forest Service's Land Management Plan (USFS, 2005) requires forest scale monitoring of habitat status and trend for select MIS on the ANF. Detailed information addressing effects to MIS are incorporated by reference and will be included in Final EIS/EIR. Table C.3-11 identifies permanent impacts to MIS habitat that would occur during implementation of the Project.

Table C.3-11. Impacts to Management Indicators and Management Indicator Species on the ANF		
Management Indicator (MI)	Management Indicator Species (MIS)	Acres Directly Impacted by Proposed Project
Fragmentation	Mountain lion	65
Healthy Diverse Habitats	Mule deer	65
Aquatic Habitat	Arroyo toad	0.33
Riparian Habitat	Song Sparrow	0.33

Healthy Diverse Habitats (Mule Deer)

Mule deer are used by the Forest Service as an indicator of healthy diverse habitats. Availability of suitable vegetation for fawning, forage, and cover in close proximity to water is the most limiting factor for mule deer. The ANF LRMP (USFS, 2005) considers all habitat types as potentially suitable for mule

deer. Therefore, the entire Project area on the ANF is considered suitable habitat for mule deer. Implementation of the Project would impact approximately 65 acres of mule deer habitat.

Relationship of Project-Level Impacts to Forest Scale Habitat and Population Trends. Mule deer are known to inhabit the entire forest, consisting of a total of 701,122 acres. Forest-wide deer population distribution is stable. The Project would result in a temporary decrease in forest-wide habitat (0.01 percent of forest-wide habitat) for deer during sediment removal activities. This decrease is negligible and equivalent to less than one deer home range. The Project-level habitat impacts would not modify the existing forest-wide population distribution trend.

Fragmentation (Mountain lion)

Availability of adequate prey base and habitat connectivity between subpopulations has been identified as the limiting factors for mountain lion populations. The Forest LRMP (USFS, 2005) considers all habitat types as potentially suitable for the mountain lion. Therefore, the entire Project area on the ANF is considered suitable habitat. Implementation of the Project would impact approximately 65 acres of mountain lion habitat.

Relationship of Project-Level Impacts to Forest Scale Habitat and Population Trends. Mountain lions are known to inhabit the entire forest, consisting of a total of 701,122 acres. Forest-wide mountain lion population distribution is stable. The Project would result in a slight temporary decrease in forest-wide habitat (0.01 percent of forest-wide habitat) for mountain lion. Based on the small size of the affected habitat, Project activities are not expected to lead to a decrease in population numbers or modify the existing forest-wide population distribution trend.

Riparian Habitat (Song Sparrow)

The primary threat to song sparrows and other riparian birds is the destruction of riparian habitat and loss of water (USFS, 2005). Acres of suitable habitat are used to assess the effects of the Project and alternatives on song sparrow habitat. Implementation of the Project would permanently impact approximately 0.33 acres of song sparrow habitat.

Relationship of Project-Level Impacts to Forest Scale Habitat and Population Trends. The Project would result in a slight temporary decrease in song sparrow habitat, which is equivalent to one song sparrow home range (Zeiner et al., 1990a). The slight decrease in habitat is not expected to lead to a decrease in population numbers or modify the existing declining forest-wide population distribution trend.

Aquatic Habitat (Arroyo toad)

Acres of suitable aquatic and riparian habitat are used to assess the effects of the Project and alternatives on arroyo toad habitat. Implementation of the Project would permanently impact 0.33 acre of suitable arroyo toad habitat.

Relationship of Project-Level Impacts to Forest Scale Habitat and Population Trends. The effects of the Project would result in a small decrease in forest-wide suitable habitat for arroyo toad. The Project would not alter or contribute to the existing forest-wide habitat or population trend.

To reduce effects of the Project on MIS, PWD would implement SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC

BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds), SPC BIO-6a (Conduct Surveys and Implement Avoidance Measures), SPC BIO-6b (Conduct Clearance Surveys and Construction Monitoring), and SPC BIO-6c (Seasonal Surveys During Water Deliveries). These measures target restoration of riparian vegetation; limit disturbance to riparian songbirds and arroyo toads, and provide best management practices to reduce or avoid impacts to MIS.

SPCs Applicable to Impact BIO-26

SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities)

SPC BIO-1b (Worker Environmental Awareness Program)

SPC BIO-2 (Prepare and Implement a Weed Control Plan)

SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds)

SPC BIO-6a (Conduct Surveys and Implement Avoidance Measures)

SPC BIO-6b (Conduct Clearance Surveys and Construction Monitoring)

SPC BIO-6c (Seasonal Surveys During Water Deliveries)

CEQA Significance Conclusion

Impacts to MIS would occur during implementation of the Project and are evaluated in the context of habitat loss. For all MIS in the Project area, loss of habitat would be minimal, largely temporary, and replaced at the conclusion of sediment removal activities. To further reduce effects of the Project on MIS, PWD would implement SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities), SPC BIO-1b (Worker Environmental Awareness Program), SPC BIO-2 (Prepare and Implement a Weed Control Plan), SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds), SPC BIO-6a (Conduct Surveys and Implement Avoidance Measures), SPC BIO-6b (Conduct Clearance Surveys and Construction Monitoring), and SPC BIO-6c (Seasonal Surveys During Water Deliveries). These measures target restoration of riparian vegetation, limit disturbance to riparian songbirds and arroyo toads, and provide best management practices to reduce or avoid impacts to MIS. Implementation of these SPCs ensures impacts would remain less than significant (Class III).

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances. (Criterion BIO6)

The Project may result in the loss of Joshua trees and juniper trees at the 47th Street East sediment disposal area. These species receive protection from the Palmdale Native Desert Vegetation Ordinance. Chapter 14.04 of the City of Palmdale Municipal Code requires a desert vegetation preservation plan with minimum preservation standards for removal of vegetation at sites with Joshua trees and other species included in the California Desert Native Plants Act, California Food and Agriculture Code, Division 23. In compliance with these regulations, PWD shall obtain permits from both Los Angeles County for the removal of Joshua trees and other native vegetation that do not occur on NFS lands. If onsite preservation is not feasible PWD would acquire additional lands preserving protected trees. PWD may also pay in lieu fees in compliance with this regulation.

Because of the development of SPC's described above in Criteria BIO1 through BIO5, the Project is consistent with local and regional policies and ordinances protecting biological resources including the Los Angeles County Tree Removal requirements, the Palmdale Municipal Code, and the California Desert Native Plants Act. Therefore, no additional impact not already discussed elsewhere in the document would occur.

CEQA Significance Conclusion

Through Project design and implementation of SPC's described in Criteria BIO1 through BIO5, the Project is consistent with local and regional policies and ordinances protecting biological resources including the Los Angeles County Tree Removal requirements, the Palmdale Municipal Code, and the California Desert Native Plants Act. Therefore, no impact would occur.

Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP. (Criterion BIO7)

The sediment disposal sites including the exhausted quarries are located on private lands included in the West Mojave Plan Habitat Conservation Plan (WMPHCP). The WMPHCP was completed in March 2006 but has not been formally adopted on private lands. The Reservoir is located on lands included in the 2005 Forest Service's Land Management Plan. The 2005 Land Management Plan includes objectives and direction for managing resources on the ANF, including plant and wildlife species that are federally listed and/or Forest Service sensitive. The Plan includes Management Strategy WL-1 (Threatened, Endangered, Proposed, Candidate, and Sensitive Species Management) which requires the Forest Service to manage habitat to move listed species toward recovery and de-listing and to prevent listing of proposed and sensitive species. Management Strategy WL-2 (Management of Species of Concern) directs the Forest Service to maintain and improve habitat for fish, wildlife, and plants, including those designated as game species, harvest species, management indicator species, and watch list species. The Plan directs Forest Service management activities to prevent the introduction of new invaders, to conduct early treatment on new infestations, and contain and control established infestation of invasive species through Management Strategy IS-1.

As part of the Project, PWD would implement SPC's, described in Criteria BIO1 through BIO5. Implementation of these SPC's would ensure the Project is compliant with the 2005 Land Management Plan and no impact would occur.

C.3.4.5 Alternative 1: Reduced Sediment Removal Intensity

Under Alternative 1, construction of the grade control structure would be identical to the Project. This alternative would differ in the timing and duration of sediment removal activities. Under this Alternative sediment removal would commence on July 1st compared to the day after Labor Day; work would be conducted 5 days a week instead of 6; and the duration of sediment removal activities would increase to 13 years, instead of 6.

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or FWS (Criterion BIO1)

Implementation of Alternative 1 would result in the same impacts to native vegetation (Impact BIO-1), from habitat loss and from the spread of invasive plant species (Impact BIO-2) as described for the Project. Under certain circumstances, weeds could become established earlier and fewer areas supporting herbaceous vegetation may be present as water levels are generally lowered at the end of summer in response to reduced inflow and ongoing water deliveries.

Implementation of Alternative 1 would result in the same impacts to wildlife (Impact BIO-3) and nesting birds (Impact BIO-4) as described for the Project. The reduction in truck trips (180 per day vs. 480 per day) would reduce adverse effects from road kill to some extent but the extended construction period

would still result in similar impacts to these species. Similarly, the commencement of work on July 1 would increase the likelihood of disturbing nesting birds. Implementation of the same SPCs for the Project would reduce impacts to biological resources identified under Criterion BIO 1 from Alternative 1.

CEQA Significance Conclusion

Implementation of Alternative 1 would result in the same impacts to biological resources identified under Criterion BIO 1 as described for the Project and would be considered significant. Implementation of the same SPCs for the Project would reduce impacts to biological resources identified under Criterion BIO 1 to a less-than-significant level (Class III).

Have an adverse effect, either directly or through habitat modifications, on any species listed as fully protected, endangered, threatened, or proposed or critical habitat for these species (Criterion BIO2)

Implementation of Alternative 1 would result in the same impacts or greater to species listed as fully protected, endangered, threatened, or proposed or critical habitat as the Project. Listed plant species (Impact BIO-5) are not present and would be avoided if detected. Impacts to arroyo toads (Impact BIO-6) would be greater because commencing work in July would require draining the reservoir earlier in the season. If arroyo toads are present in the upstream margin of the reservoir they could be subject to stranding. However, arroyo toad egg masses are typically not found in July and metamorph toads and larvae may be capable of moving closer to the active stream channel.

Alternative 1 would result in the same impacts to California condors (Impact BIO-7) as described for the Project if present. The reduction in truck trips (180/day vs. 480/day) would reduce adverse effects from road kill which may attract condors. Impacts to listed songbirds (Impact BIO-8), Swainson's hawk (Impact BIO-9), and bald or golden eagles (Impact BIO-10) would also be the same; however, the commencement of work on July 1 would increase the likelihood of disturbing nesting birds in the Reservoir, sediment disposal sites, or along Cheseboro Road. Commencing work earlier in the season may also slightly increase the risk to ringtail (Impact BIO-11) when compared to the Project by disturbing pupping season. Implementation of the same SPCs for the Project would reduce impacts to biological resources identified under Criterion BIO2 from Alternative 1.

CEQA Significance Conclusion

Implementation of Alternative 1 would result in the same impacts to biological resources identified under Criterion BIO 2 as described for the Project and would be considered significant. Implementation of the same SPCs for the Project would reduce impacts to biological resources identified under Criterion BIO 2 to a less-than-significant level (Class III).

Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW, Forest Service, or USFWS (Criterion BIO3)

Implementation of Alternative 1 would result in the same impacts to candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW, Forest Service, or USFWS species as described for the Project. Sensitive plants (Impact BIO-12) or invertebrates (Impact BIO-13) were not found in the disturbance area and would be subject to the same direct and indirect impacts as the Project. Implementation of Alternative 1 may result in a minor reduction in road kill to butterflies should they occur from fewer truck trips.

Implementation of Alternative 1 would result in the same impacts to southwestern pond turtles (Impact BIO-14), two-striped garter snakes (Impact BIO-15), coast range newts (Impact BIO-16), and sensitive amphibian and reptile species (Impact BIO-17) as described for the Project. Reduced water levels required to construct in July could reduce habitat for these species in the Reservoir; however, fluctuating water levels at the reservoir occur during below-normal rain years.

Implementation of Alternative 1 would result in the same impacts to burrowing owls (Impact BIO-18), special status nesting birds (Impact BIO-19), special status bats (Impact BIO-20), and other special-status mammals (Impact BIO-21, Impact BIO-22, and Impact BIO-23) or greater as described for the Project. The commencement of work on July 1 would increase the likelihood of disturbing active breeding birds or disrupt mammal denning or pupping should they occur. Implementation of the same SPCs for the Project would reduce impacts to biological resources identified under Criterion BIO 3 from Alternative 1.

CEQA Significance Conclusion

Implementation of Alternative 1 would result in the same impacts to biological resources identified under Criterion BIO 3 as described for the Project and would be considered significant. Implementation the same SPCs for the Project would reduce impacts to biological resources identified under Criterion BIO 3 to a less than significant level (Class III).

Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (Criterion BIO4)

Implementation of Alternative 1 would result in the same impacts to jurisdictional waters (Impact BIO-24) as described for the Project. Implementation of the same SPCs for the Project would reduce impacts to jurisdictional waters identified under Criterion BIO 4 from Alternative 1. Please refer to Appendix F for a 404(b)(1) Evaluation Summary of the proposed Project and alternatives.

CEQA Significance Conclusion

Implementation of Alternative1 would result in the same impacts to jurisdictional waters as described for the Project and would be significant. Implementation of the same SPCs for the Project would reduce impacts to jurisdictional waters identified under Criterion BIO 4 to a less-than-significant level (Class III).

Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Criterion BIO5)

Implementation of Alternative 1 would result in the same impacts to established wildlife corridors (Impact BIO-25) and MIS (Impact BIO-26) as described for the Project. Implementation of the same SPCs for the Project would reduce impacts to established wildlife corridors and MIS identified under Criterion BIO 5 from Alternative 1.

CEQA Significance Conclusion

Implementation of Alternative 1 would result in the same impacts to established wildlife corridors and MIS as described for the Project and would be less than significant (Class III).

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances. (Criterion BIO6)

Implementation of Alternative 1 would result in the same determination of compliance with existing policies or ordinances protecting biological resources as described for the Project. Because of the development of SPC's described above in Criteria BIO1 through BIO5, the Alternative 1 is consistent with the local and regional policies and ordinances protecting biological resources including the Los Angeles County Tree Removal requirements, the Palmdale Municipal Code, and the California Desert Native Plants Act. Therefore, no additional impact, not already discussed elsewhere in the document, would occur.

CEQA Significance Conclusion

Implementation of Alternative 1 would result in the same determination of compliance with existing policies or ordinances protecting biological resources as described for the Project. Therefore, no impact would occur.

Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP. (Criterion BIO7)

Implementation of Alternative 1 would result in the same determination of compliance with existing HCPs, NCCP's, or State HCP's as described for the Project. Because of SPC's described in Criteria BIO1 through BIO5, the Project is compliant with the 2005 Forest Service Land Management Plan and no impact would occur.

C.3.4.6 No Action/No Project Alternative

Under the No Action/No Project Alternative, sediment removal activities would not occur and sediment would continue to accumulate upstream of Littlerock Dam at the annual average rate of 38,000 cubic yards per year. Under the No Action/No Project Alternative continued sediment deposition could compromise the long-term integrity of the Dam. In this event, the California Department of Water Resources (DWR) Division of Safety of Dams could require the Dam to be breached. In addition, as the Dam would no longer function as a viable water storage facility, it would not be in compliance with the Forest Service Special Use Permit under which it currently operates. Subsequently, the Dam may need to be demolished per the conditions identified in the Forest Service's Special Use Permit. Demolition of the Dam would result in the elimination of the potential for water impoundment at the existing Reservoir, and permanent loss of this potable water source. All sediment accumulated behind the Dam would have to be removed in a project similar to, but larger than, the Project. At full capacity, sediment accumulated behind the Dam would be approximately 7.4 million cubic yards.

If the Dam remained stable and sediment continued to accumulate within the Reservoir, water storage would diminish and the reservoir would fill with sediment from upstream areas. Similar to upstream conditions, riparian vegetation would be expected to recruit along the margins of the active channel and may eventually develop into a mature riparian community. Other areas of the reservoir likely would be similar to alluvial fan communities and consist of a mosaic of upland and riparian vegetation depending on the scour regime associated with the creek. Should this occur, the Project area may develop characteristics that would support habitat for arroyo toad and other species associated with riparian vegetation and floodplains.

If the dam becomes unstable and must be removed, impacts to native vegetation would be greater and encompass a wider area compared to the Project. Demolition of the dam and restoration of Little Rock Creek would require the removal of 2.8 million cubic yards of sediment and dam concrete. Removal of

sediment and demolition of the dam would result in a project similar to, but larger than, the Project, with greater impacts to native vegetation above and below the dam.

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or FWS (Criterion BIO1)

Under the No Action/No Project Alternative impacts to native vegetation (Impact BIO-1), habitat loss from the spread of invasive plant species (Impact BIO-2), disturbance to common wildlife (Impact BIO-3) or nesting birds (Impact BIO-4) would not occur. Native vegetation would likely expand as the Reservoir fills with sediment increasing the amount of vegetation in the Project area. Overtime the Reservoir would support extensive nesting habitat for a variety birds. It is uncertain if the acquisition of water to replace the lost Reservoir capacity would result in impacts to these resources at other locations.

If the dam becomes unstable and must be removed, impacts to biological resources identified under Criterion BIO 1 would be greater because of expanded construction activities and encompass a total similar area compared to the Project. Under this scenario, the removal of the dam would also result in habitat degradation to downstream areas. It is unknown what project commitments would be included in this alternative, or if they would be adequate to protect biological resources. Therefore, this alternative would result in a direct and adverse impact.

CEQA Significance Conclusion

Under the No Action/No Project Alternative if the dam becomes unstable and must be removed impacts to biological resources identified under Criterion BIO 1 would be greater and encompass a wider area compared to the Project. These impacts would be considered significant (Class II).

Have an adverse effect, either directly or through habitat modifications, on any species listed as fully protected, endangered, threatened, or proposed or critical habitat for these species (Criterion BIO2).

Under the No Action/No Project Alternative impacts to listed plant populations (Impact BIO-5), arroyo toads (Impact BIO-6), California condors (Impact BIO-7), listed songbirds (Impact BIO-7), Swainson's hawk (Impact BIO-8), bald and golden eagles (Impact BIO-9), or ringtail (Impact BIO-11) would not occur. Over time, it is possible that sensitive plants and other listed species could become established at or near the Reservoir as new habitat develops. The loss of the Reservoir would likely reduce the presence of non-native predatory fish and provide additional habitat for native wildlife in Little Rock Creek. Impacts to habitat in off-site locations would remain available for sensitive wildlife. It is uncertain if the acquisition of water to replace the lost Reservoir capacity would result in impacts to listed plants at other locations.

If the dam becomes unstable and must be removed, impacts to biological resources identified under Criterion BIO 2 would be greater compared to the Project. The removal of sediment and the dam would alter stream and channel morphology in Little Rock Creek upstream of Rocky Point and below the dam. This habitat loss would substantially alter conditions in the creek and result in the acquisition of additional sediment disposal sites in other areas. It is unknown what project commitments would be included in this alternative, or if they would be adequate to protect biological resources. Therefore, this alternative would result in a direct and adverse impact.

CEQA Significance Conclusion

If the dam becomes unstable and must be removed, impacts to biological resources identified under Criterion BIO 2 would be greater compared to the Project. These impacts would be considered significant (Class II).

Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW, Forest Service, or USFWS (Criterion BIO3)

Under the No Action/No Project Alternative impacts to sensitive plant populations (Impact BIO-12), special-status invertebrates (Impact BIO-13), special-status reptiles and amphibians (Impact BIO-14, Impact BIO-15, Impact BIO-16, and Impact BIO-17), burrowing owls (Impact BIO-18), sensitive birds (Impact BIO-19), special-status bats (Impact BIO-20), and other special-status mammals (Impact BIO-21, Impact BIO-22, and Impact BIO-23) would not occur. Over time it is possible that sensitive plants and other species could become established at or near the Reservoir as new habitat develops. Many of these species may benefit from the loss of deep water lake habitat that currently supports a broad assemblage of predatory fish. Over time, it is possible that more natural stream conditions favored by native species would become established.

If the dam becomes unstable and must be removed, impacts to biological resources identified under Criterion BIO 3 would be greater compared to the Project due to the expanded construction activities. Removal of sediment and demolition of the dam would result in a project similar to, but larger than, the Project, with greater impacts to sensitive species above and below the dam. Increased truck traffic to remove accumulated sediment would indirectly affect sensitive species in adjacent areas. It is unknown what project commitments would be included in this alternative, or if they would be adequate to protect biological resources. Therefore, this alternative would result in a direct and adverse impact.

CEQA Significance Conclusion

If the dam becomes unstable and must be removed impacts to biological resources identified under Criterion BIO 3 would be greater compared to the Project. These impacts would be considered significant (Class II).

Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (Criterion BIO4)

Under the No Action/No Project Alternative impacts to jurisdictional waters (Impact BIO-24) would not occur. Over time, riparian features would increase and the Reservoir would likely shift from an open water community to a more natural stream channel. It is uncertain if the acquisition of water to replace the lost Reservoir capacity would result in impacts to jurisdictional features at other locations. If the dam becomes unstable and must be removed, impacts to jurisdictional waters would be greater compared to the Project. It is unknown what project commitments would be included in this alternative, or if they would be adequate to protect jurisdictional resources. Therefore, this alternative would result in a direct and adverse impact. Please refer to Appendix F for a 404(b)(1) Evaluation Summary of the proposed Project and alternatives.

CEQA Significance Conclusion

If the dam becomes unstable and must be removed, impacts to jurisdictional resources identified under Criterion BIO 4 would be greater compared to the Project. These impacts would be considered significant (Class II).

Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Criterion BIO5)

Under the No Action/No Project Alternative, impacts to established wildlife corridors or MIS would not occur. There are no known bird or bat migratory corridors that would be directly impeded by the Project. Over time, the establishment of riparian vegetation in the reservoir may support additional use by resident and migratory species or MIS.

If the dam becomes unstable and must be removed, this alternative would increase disturbance to wildlife in the region including MIS compared to the Project. However, over time, this alternative would re-establish connectivity within the watershed. It is unknown what project commitments would be included in this alternative, or if they would be adequate to protect established wildlife corridors or MIS. Therefore, this alternative would result in a direct and adverse impact.

CEQA Significance Conclusion

If the dam becomes unstable and must be removed, impacts to jurisdictional resources identified under Criterion BIO 5 would be greater compared to the Project. These impacts would be considered significant (Class II).

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances. (Criterion BIO6)

Under the No Action/No Project Alternative, the Project would not be implemented and there would no conflict with existing policies or ordinances protecting biological resources. If the dam becomes unstable and must be removed implementation of No Action/No Project Alternative could conflict with existing policies or ordinances protecting biological resources as described for the Project. It is unknown what project commitments would be included in this alternative, or if they would be adequate to comply with policies or ordinances protecting biological resources. Therefore, this alternative would result in a direct and adverse impact.

CEQA Significance Conclusion

If the dam becomes unstable and must be removed the No Action/No Project Alternative could conflict with existing policies or ordinances protecting biological resources identified under Criterion BIO 6. These impacts would be considered significant (Class II).

Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP. (Criterion BIO7)

Under the No Action/No Project Alternative, the Project would not be implemented and there would no conflict with existing HCPs, NCCP's, or State HCP's. If the dam becomes unstable and must be removed implementation of No Action/No Project Alternative could conflict with existing HCPs, NCCP's, or State

HCP's as described for the Project. It is unknown what project commitments would be included in this alternative, or if they would be adequate to comply with HCPs, NCCP's, or State HCP's protecting biological resources. Therefore, this alternative would result in a direct and adverse impact.

CEQA Significance Conclusion

If the dam becomes unstable and must be removed the No Action/No Project Alternative could conflict with existing HCPs, NCCP's, or State HCP's protecting biological resources identified under Criterion BIO 7. These impacts would be considered significant (Class II).

C.3.5 Impact Summary

Table C.3-12 summarizes direct and indirect environmental impacts of the Project and alternatives. See Section C.3.4 for the environmental analysis and full text of recommended SPCs.

Table C.3-12. Summary of Impacts and Standard Project Conservation Measures – Biological Resources					
Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt. 1	Alt. 2: No Action	NFS Lands ¹	
BIO-1: The Project would result in temporary and permanent losses of native vegetation.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program)
BIO-2: The Project would result in the establishment and spread of noxious weeds.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program)
BIO-3: The Project would cause the loss of foraging habitat for wildlife or result in disturbance to wildlife in adjacent habitat.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan)
BIO-4: The Project would result in disturbance to nesting birds or raptors.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) SPC BIO-1b (Worker Environmental Awareness Program)

Table C.3-12. Summary of Impacts and Standard Project Conservation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt. 1	Alt. 2: No Action	NFS Lands ¹	
BIO-5: The Project could disturb endangered, threatened, or proposed plant species or their habitat.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-5 (Conduct Preconstruction Surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Forest Service Sensitive Plants and Avoid Any Located Occurrences of Listed Plants) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan)
BIO-6: The Project would result in loss or disturbance to arroyo toads.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-6a (Conduct Surveys and Implement Avoidance Measures) SPC BIO-6b (Conduct Clearance Surveys and Construction Monitoring) SPC BIO-6c (Seasonal Surveys During Water Deliveries) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds) SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels) SPC WQ-1 (Prepare Spill Response Plan)
BIO-7: The Project could result in the loss of California condors.	Class III	Class III	No impact* Class II**	No	SPC BIO-7 (Monitor Construction and Remove Trash and Microtrash) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

Table C.3-12. Summary of Impacts and Standard Project Conservation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt. 1	Alt. 2: No Action	NFS Lands ¹	
BIO-8: The Project could disturb nesting willow flycatchers, southwestern willow flycatchers, least Bell's vireos, or their habitat.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)
BIO-9: The Project would disturb Swainson's hawks.	Class III	Class III	No impact* Class II**	No	SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)
BIO-10: The Project would result in disturbance to Bald or Golden Eagles.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat) SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

Table C.3-12. Summary of Impacts and Standard Project Conservation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt. 1	Alt. 2: No Action	NFS Lands ¹	
BIO-11: The Project would result in disturbance or loss of habitat for the ringtail.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-11 (Conduct Focused Surveys for Ringtail and Avoid denning Areas) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)
BIO-12: The Project would result in the loss of candidate, Forest Service Sensitive, or special-status plant species.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-5 (Conduct Preconstruction Surveys for State and Federally Threatened, Endangered, Proposed, Petitioned, Candidate, and Forest Service Sensitive Plants and Avoid Any Located Occurrences of Listed Plants) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)
BIO-13: The Project could result in the loss of Shoulderband Snails or San Emigdio Blue Butterfly.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

Table C.3-12. Summary of Impacts and Standard Project Conservation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt. 1	Alt. 2: No Action	NFS Lands ¹	
BIO-14: The Project could result in mortality or injury to southwestern pond turtles or a disruption of nesting habitat.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-14 (Conduct Surveys for Southwestern Pond Turtle and Implement Monitoring, Avoidance, and Minimization Measures) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)
BIO-15: The Project could result in injury or mortality for two-striped garter snakes.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-15 (Conduct Surveys for Two-Striped Garter Snakes and Implement Monitoring, Avoidance, and Minimization Measures) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)
BIO-16: The Project could result in injury or mortality for Coast Range newts.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-16 (Conduct Surveys for Coast Range Newts and Implement Monitoring, Avoidance, and Minimization Measures) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds) SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels) SPC WQ-1 (Prepare Spill Response Plan) SPC WQ-2 (Prepare a Storm Water Pollution Prevention Plan [SWPPP])

Table C.3-12. Summary of Impacts and Standard Project Conservation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt. 1	Alt. 2: No Action	NFS Lands ¹	
BIO-17: The Project could result in injury or mortality of terrestrial California Species of Special Concern and Forest Service Sensitive amphibian and reptile species.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-17 (Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds) SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels) SPC WQ-1 (Prepare Spill Response Plan) SPC WQ-2 (Prepare a Storm Water Pollution Prevention Plan [SWPPP])
BIO-18: The Project would result in the loss of suitable burrowing owl habitat.	Class III	Class III	No impact* Class II**	No	SPC BIO-18 (Conduct Protocol Surveys for Burrowing Owls) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat) SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

Table C.3-12. Summary of Impacts and Standard Project Conservation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt. 1	Alt. 2: No Action	NFS Lands ¹	
BIO-19: The Project could disturb Forest Service Sensitive or California Species of Special Concern birds.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) SPC BIO-8 (Conduct Protocol Surveys for Least Bell's Vireo and Avoid Occupied Habitat) SPC BIO-9 (Conduct Pre-Construction Surveys for Swainson's hawks) SPC BIO-18 (Conduct Protocol Surveys for Burrowing Owls) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)
BIO-20: The Project could result in mortality of, and loss of habitat for, special-status bat species.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-20 (Survey for Maternity Colonies or Hibernaculum for Roosting Bats) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)
BIO-21: The Project could result in mortality of, and loss of habitat for, special-status mammals.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)

Table C.3-12. Summary of Impacts and Standard Project Conservation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt. 1	Alt. 2: No Action	NFS Lands ¹	
BIO-22: The Project could result in mortality of American badgers or desert kit fox.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-22 (Conduct Surveys for American Badger and Desert Kit Fox and Avoid During the Breeding Season) SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds)
BIO-23: The Project would disturb Nelson's bighorn sheep.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds) SPC FIRE-1 (Curtailment of Activities) SPC FIRE-2 (Preparation of a Fire Plan) SPC FIRE-3 (Spark Arrester Requirements)
BIO-24: The Project could result in the loss of wetland habitats.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC AQ-2 (Fugitive Dust Controls) SPC AQ-5 (Reduce Off-Road Vehicle Speeds) SPC HYDRO-1 (Fill From Reservoir Excavation Will Not Be Placed in Stream Channels) SPC WQ-1 (Prepare Spill Response Plan)

Table C.3-12. Summary of Impacts and Standard Project Conservation Measures – Biological Resources

Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt. 1	Alt. 2: No Action	NFS Lands ¹	
BIO-25: The Project would interfere with established wildlife migratory corridors.	Class III	Class III	No impact* Class II**	Yes	Not Applicable
BIO-26: The Project would result in effects to Management Indicator Species.	Class III	Class III	No impact* Class II**	Yes	SPC BIO-1a (Provide Restoration/Compensation for Impacts to Native Vegetation Communities) SPC BIO-1b (Worker Environmental Awareness Program) SPC BIO-2 (Prepare and Implement a Weed Control Plan) SPC BIO-4 (Conduct Pre-Construction Surveys and Monitoring for Breeding Birds) SPC BIO-6a (Conduct Surveys and Implement Avoidance Measures) SPC BIO-6b (Conduct Clearance Surveys and Construction Monitoring) SPC BIO-6c (Seasonal Surveys During Water Deliveries)

Notes:

1 - Indicates whether this impact is applicable to National Forest System lands.

* Assumes the dam remains stable

**Assumes the dam becomes unstable and requires demolition